

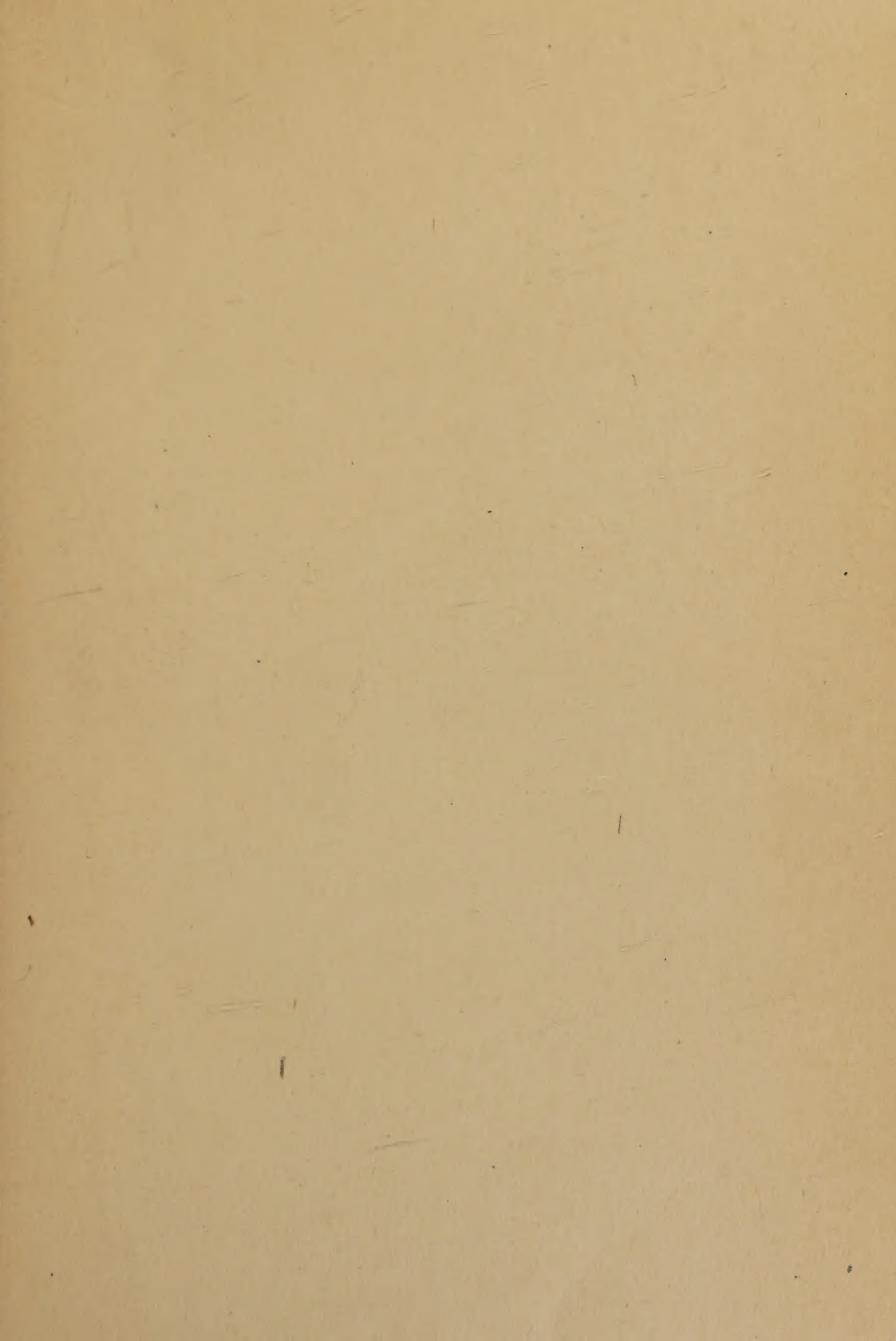
SOUTH AMERICA
PAST AND PRESENT


LUIS CINCINATO BOLLO

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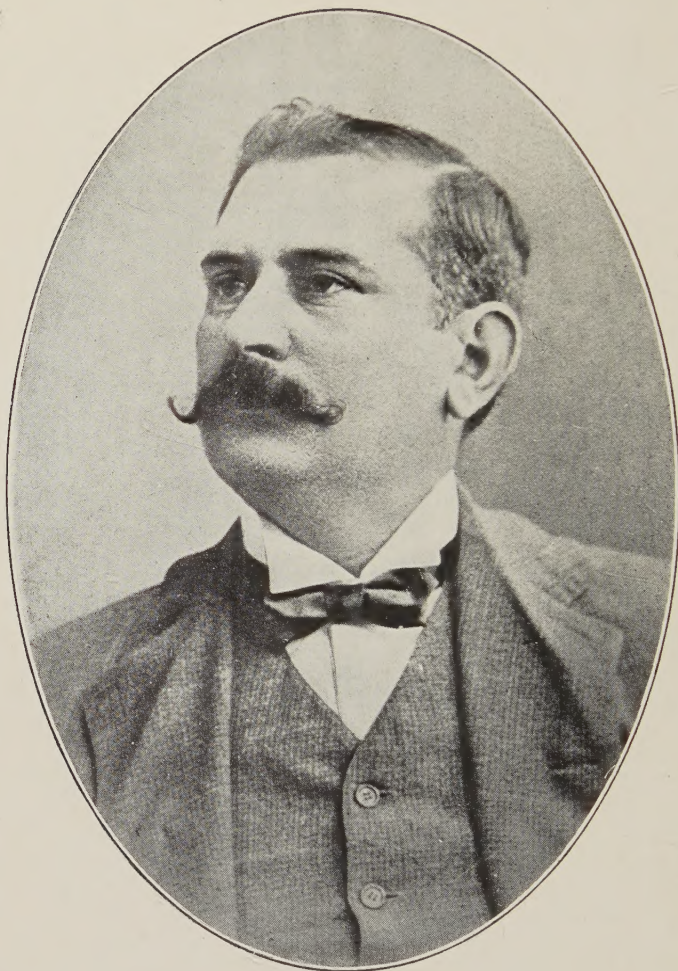


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LUIS CINCINATO BOLLO

SOUTH AMERICA PAST AND PRESENT

By LUIS CINCINATO BOLLO

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of Demographical Statistics of Uruguay. :: :: :: ::
Author of Physical Geography; Geography of America;
Ideas in Zoology; Climatology of the La Plata Region,
etc., etc.

Translated from Spanish
By **NEMESIO BAROS**

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FIRST PART

SOUTH AMERICA PAST

CHAPTER I

REGION OF THE LA PLATA RIVER

SUMMARY

The Aborigines—Peoples of the Andes and the Pampas—Submissive Disposition of the Andeans—Haughty and Fighting Spirit of the Pampas—How these Peoples' Institutions Contributed to the Formation of this Very Marked Contrast—Conquest of the Region of the La Plata River—Condition of the Indians of South America During the Conquest—The Jesuits—System of Jesuitical Government—Social Condition of the Indigenes of Bolivia—Spanish Settlements in Uruguay—Disputes Over the Oriental Territory of Uruguay Between Spaniards and Portuguese—Founding of the Viceroyship of the Rio de La Plata in 1776—Last War Between Spain and Portugal (1800) for the Oriental Missions of Upper Uruguay—Invasions by the English in 1806 and 1807—Popular Movements Forerunners of the South American Revolution in Caracas in 1711 and 1713, Cochabamba in 1730, Asuncion in 1731, Quito, Chuquisaca, Montevideo and Caracas in 1809 and Buenos Aires in 1810—Artigas Victor in the First Battle of the La Plata River Against the Spaniards at Las Piedras in 1811—The Orientales Abandoned by the Buenos Aires Assembly, Obligated to Combat the Spaniards and Portuguese—Exodus of the People of Eastern Uruguay.

THE ABORIGINES

At the time of the discovery of America by Columbus in 1492, it was inhabited by many millions of Indians unevenly scattered throughout its various regions, some of which and among them what are now known as Peru and Bolivia compared in density of population with some of the European countries of the same period. There is no

Contrast between
the Peoples of
the Andes and the
Pampas

data on which to base an account of the exact number of Indians inhabiting these regions at the time, but it remains an undis-

puted fact that Perú and Bolivia had a number of cities with a dense population depending principally upon agriculture, the mining industry being then of little importance, due to the lack of commercial intercourse with the outside world, for excepting the settlements which now comprise Ecuador and Colombia, they were all inhabited by savages.

The Punas Heladas (bleak, frozen regions) of Bolivia, which are at 4,000 meters above the level of the sea, had been

the center of an advanced civilization which left the famous ruins of Tiahuanaco, colossal city which must have exceeded in population the city of Cuzco, the capital of the Empire of the Incas, which the Spaniards found there on their arrival in Peru.

The founders of Tiahuanaco were not the miserable Aimarás who were first visited by the Spanish conquerors, but a banished and ignored tribe who were destroyed or compelled to migrate by the advance of a more barbarous and warring nation from the land to the south which is now Argentina.

The whole Tiahuanaco race may have disappeared or been obliged to abandon its native haunts through some change in the living conditions on the lofty Bolivian plateau, which having risen higher through the action of some seismic disturbance became uninhabitable for man and his progeny. For were it not for the vast mineral wealth first found there by the Spaniards—principally silver, which gave more than a thousand million pesos, from the Potosí and other nearby regions—and the rich deposits of lead, copper, tin, etc., which are now being developed, the Puna, that bleak and frozen region, would now be completely deserted. This meseta (plateau) has not always remained at its present elevation, which fact is made evident by the soil of the pampas, composed mostly of sediment such as is deposited under water and not only found on low, level ground but at more than one thousand meters above the sea on the sides of the Cordillera Real of Bolivia, which slopes as far as the immense desert-like plain called El Chaco.

On the same soil of the pampas, which covers the Argentine plain, and which is to be found at more than one thousand metres elevation, numerous species of fossils have been discovered corresponding to the tiger, the predecessor of the elephant, ape, megatheriums, etc. No better proof than this need be asked to substantiate the fact that the Bolivian plateau has risen considerably higher than its original elevation above sea level.

These changes have occurred quite frequently in South American regions as well as in other parts of the world, as is the case in the desert of Sahara in the African continent, where at one time abundant streams drained its vast domains and luxuriant vegetation and domestic animals of all kinds were to be found; these included the ox, a likeness of which has been found hewn in the rocks, no doubt carved there by the unknown settler of that unrecorded epoch.

The upheaval of the Alps mountains to beyond a certain height intercepted the northerly rain-laden winds, thereby making a barren, arid desert where once vegetation abounded and beautiful rivers flowed.

The tablelands of Patagonia—a desolate arid region from the Andes to the Atlantic, which Darwin termed “Accursed Land”—possess fossil fauna of mammals similar to that of the pampas, a fauna so rich in species and variety of form (more than 1,500 of the 5,000 known throughout the world) that make this the biggest fossil graveyard of the world.

You may find there all the species of fossils, from the predecessor of the horse to that of the ape, which bears closer physical resemblance to man, not excluding the anthropomorphus of Asia and Africa, the gliptodon which furnished Darwin with material proof for the elucidation of the metamorphosis, for it was this gigantic gliptodon which proved to be the predecessor of the “mulita” of the pampas. The fossil species of La Pampa and Patagonia will be dealt with in another part of the book.

These huge creatures, like the megatherium, the primitive horse and other herbivorous animals, had to have an overabundance of food. The gigantic forests where they wandered at will, stand today petrified mute witnesses attesting to the history of the region.

The change in the elevation of the Andean range in rising to a height that impeded the eastbound course of clouds from the Pacific, which produced rain to feed this flora, gradually caused its disappearance as well as that of the animals. Evidences of this upheaval are found at Mendoza in the

pampa soil which formed the prairie now at 1,000 metres above sea level. The changes of La Patagonia are identical to those of the Bolivian plateau.

The theory that the American Indians are descendants of the Mongolians and that the famous plateau of Pamir may have been the cradle of humanity, can not now be accepted. The paleontological records show that the new world of the Spaniards is older than that which was believed to have been the primitive home of man.

The race which inhabited the Andean region at Cuenca on the borders of Lake Titicaca, had reached a high state of civilization, as is verified by the Templo del Sol (Temple of the Sun), the palaces and tombs of the Incas, the highways, the aqueducts and various other improvements, product of engineering skill. Politically, this nation was not as far advanced as others which were considered barbarians, among them the Charrúas, Arancanos and the tribes of the pampas, all of which constituted several true republics where all governmental functions were directed by parliaments or assemblies and where the executive was openly elected by the male members of the tribe. Every Indian was endowed with individual sovereign privileges to freely elect his governing chief, whom he obeyed strictly in all that obediencé was due.

The Quichuas and Aimarás were organized under governments similar to that under the then reigning kings of the Orient and of Egypt, whose subjects blindly obeyed every wish of a potentate whom they had not elected to power, but who had by divine inheritance received the authority to govern.

This socialistic system, wherein the state not only governed but also interfered in every act of the life of the individual, from the cultivation of the soil to even the most harmless diversions, and where the police vigilance had reached the stage where every ten individuals were watched by a sort of deputy who became responsible for the shortcomings of others and such as he himself could not have

possibly prevented, had broken up the spirit of individual initiative and spontaneity and caused the people to become accustomed to entirely depend upon and expect everything from the government.

The absolute and complete submission of the Indians to the self-constituted authorities, together with the want of initiative which is the main characteristic of the Andean Indian, was in direct contrast to the aggressiveness of the Pampas, Araucanos, Charrúas and Guaraníes.

The Spaniards with a handful of men subdued powerful nations of millions of inhabitants, by merely mastering the Incas. Pizarro with only 180 soldiers of infantry and thirty-seven of cavalry started from Panama in 1531 to conquer Peru, which was then in itself a powerful empire of several million population, and accomplished his mission, while Don Pedro de Mendoza with more than one thousand men founded the city of Buenos Aires in 1535 and had to abandon it on the following year, after losing half of his men on being attacked by the Querandíes and Charrúas.

The Charrúas occupied what is now República Oriental del Uruguay and crossed the river to assist in the expulsion of the invaders. The Spaniards, on being driven from the land which they had temporarily taken possession of and on which site is now situated the city of Buenos Aires, planned to reoccupy it, and returned later with additional reinforcements under the command of Garay, and again founded the city whose inhabitants were constantly engaged in defending themselves from continuous assaults.

Solís, the discoverer of the La Plata River, on attempting to take possession of the territory which is now Republic of Uruguay, was killed, together with some of his companions, by the Charrúas, who very heroically defended their domains.

The Spaniards later planned to found a settlement near the site where Solís died, but the Charrúas burned down the Spanish fortress and drove the Spaniards out of the country.

In 1600, Hernandarias de Saavedra, Governor of Para-

guay, thought that the time had come to exterminate the Charrúas, and so, at the head of 600 Spaniards, undertook the journey to Uruguay, where he arrived after a strenuous four months' campaign. The Charrúas engaged him in battle on the banks of the Uruguay and the Spaniards were so decisively defeated that only their leader escaped, according to the Spanish writer Centenera in his book "La Argentina."

This disaster caused Hernandarias to petition the king of Spain, Felipe II, stating that it was impossible to subdue the Charrúas by force of arms and that the missionaries must be resorted to, which proposal was accepted by the king, who sent the first missionaries to the La Plata River.

In subsequent encounters with the Spaniards from time to time, the Indians, now victors, now vanquished, yet never slaves, came into the possession of horses which had been introduced by the Spaniards and became invincible warriors.

The Querandíes and other tribes which were never vanquished first fought against the Spaniards, and later met the Argentinos in fierce encounters in the vicinity of Buenos Aires until 1879, when the conquest of the desert was finally accomplished.

The Guaraníes of Paraguay proved no less fearless adversaries in the defense of their native country against the Spaniards who founded Asunción, but instead of resorting to force the subjection of this tribe was at last effected by the Catholic missionaries.

The aggressive character of the people of the southernmost regions of South America was fully demonstrated by their initiative in the war of independence against Spain, for it was the Gauchos of the La Plata River, descendants of the Indians, who were the first to take up arms to fight for their independence. They were the liberators of Bolivia and Peru, and would have gone to Colombia and Venezuela if Bolivar's men of the plains and those of his generals, Paez and Piar, descendants of the Guaranian race, had not ventured upon a like undertaking. Nevertheless, the independence of Peru and Bolivia would not have been secured with-

out the assistance rendered by the Gauchos of La Plata, descendants of the Pampas, Charrúas and Guaraníes, all settlers of the plains.

CONQUEST OF THE LA PLATA REGION

Once the discovery of America by Columbus became a realization, Spain and Portugal lent material assistance to the undertakings which resulted in the discovery of South America as a whole, followed by its conquest and its division in almost equal parts between the two.

One of the exploring expeditions, under the command of Juan Diaz de Solís, arrived in 1516 at the mouth of a great river, or more properly speaking, the great estuary which he called Mar Dulce (Fresh Sea), as he admired its immensity. This name was later changed to Rio de La Plata. Solís was killed by the Charrúas on descending to the east side of the river.

Following the same route that Solís had traveled, Hernando Magallanes, Portuguese, in the service of Spain, arrived at Mar Dulce in 1520, and, as one of the members of his crew beheld the hill which rises opposite the capital of the state of Uruguay, exclaimed "Monte-vi-eu" (Mount saw I), which was later corrupted into Montevideo.

Sebastian Cabot, who had been in the service of England and who discovered part of the North Atlantic coast, came afterwards to take possession of the land and govern it in the name of the sovereigns of Spain. After reaching the La Plata River, Cabot discovered the great river Paraná, ascending it to its affluent, the Bermejo, where he received from the indigenes several pieces of silver, which had probably come from Bolivia. On his return to Spain, Cabot presented the pieces of silver to the court, and the opinion was that this metal was very abundant in the region drained by the river discovered by Solís, and so the name of Mar Dulce was changed to the less appropriate one of Rio de la Plata.

At a later period, in 1535, came Don Pedro de Mendoza

with more than one thousand men to substitute Cabot and founded the city of Buenos Aires. The city was attacked by the Indians, who compelled the Spaniards to retire shortly afterwards to the fort of Sancti Spiritus, founded by Cabot on the Paraná.

Mendoza was succeeded by his lieutenant, Ayolas, the founder of the city of Asunción on the river Paraguay. Not long after Ayolas was killed by the Indians, and in his place the settlers of Paraguay elected Domingo Martínez de Yrala provisional governor.

Paraguay, which comprised all the region drained by the rivers La Plata, Paraná and Uruguay, and the capital of which was Asunción, was the first center of civilization in the discovered regions. Yrala was succeeded by Alvar Núñez Cabeza de Vaca, who in turn was replaced by Ortiz de Zárate, the predecessor of Don Juan de Garay, who again founded the city of Buenos Aires in 1580. Hernando Arias de Saavedra, who was afterwards elected Governor by the settlers and his election confirmed by the Crown, was the last of the conquerors of the La Plata, a native of Asunción.

In 1617 the vast territory of which Asunción was the capital city was divided into two parts: Paraguay on the north, and what was termed Province of Buenos Aires on the south, which comprised Buenos Aires and the adjacent territory lying between the rivers Paraná and Uruguay, also the lands to the east of Uruguay to the Atlantic, called Banda Oriental (Eastern Bank), inhabited by such fierce tribes as the Charrúas, Yaros and Minuanos.

The latter was a specially important region for the reason that the livestock which had been abandoned by the Spaniards years before had rapidly multiplied. On the other hand, Paraguay was far richer in food vegetable products than what the Guaraníes, a less combative tribe, had to offer to the conquerors.

This abundance of livestock prompted the Spaniards to colonize the Banda Oriental. The first settlement, known as Santo Domingo de Soriano, was founded in 1624 on the

river Negro, a big inland stream, and at a point not far from the river Uruguay in one of the most fertile regions and where livestock thrived best. The settlement of San Salvador, which had been founded there previously, had to be abandoned, due to attacks by the Indians.

CONDITION OF THE INDIANS OF SOUTH AMERICA DURING THE CONQUEST

Before the establishment of missions the Indian subjects were distributed among the Spanish leaders, and formed what were known as *Encomiendas*, composed of Indians of both sexes employed in different kinds of work for the exclusive profit of their masters. According to regulation these Indians could not be sold, neither could they be mistreated nor driven out on account of illness or old age. Thus did Yrala organize the first Reducciones of the Indians taken prisoners. Whenever they submitted voluntarily they were gathered together in villages, with their chief at the head under the denomination *Encomienda Mitayo*, which was awarded as a prize to the chief.

These groups were not as much sought as those known as *Yanacones*, as only two months work from each man per year was allowed for the benefit of the Spaniards, and, besides, under the same arrangement, the women, children and chiefs were exempt from all work.

Through repeated complaints, which the Auditor of Charcas investigated in 1612 previous to action upon them, all personal work was abolished and recommendation made that the new settlements be left to the Jesuits.

The Jesuits who had been summoned in 1609 established themselves at La Guaira, opposite the famous cascades which are formed by the Paraná, and founded the Reducción of Loreto and others, which, after attacks by the Mamelucos of San Paulo, were transferred to the site of the present day missions comprising the territory between the upper Paraná

Reducciones (Set-
tlements of con-
verted Indians)

and the upper Uruguay at the bend where the former turns eastwardly. This took place in 1631, when the *Reducciones* of Corpus, San Ignacio, etc., were founded and which constituted the Western Missions, now the mission territory in Argentina.

Each villa or tribe was entrusted to two Jesuits, who were absolute owners of all the property and who disposed of everything at will. There was a Municipal Council in each settlement, but nominally only, as the Jesuits were the masters. All the work of cultivation, construction and lesser industries performed by the Indians was for the benefit of the Order of Jesuits, which fed them, clothed them and furnished them with all the necessities of a simple life.

Azara, the celebrated Spanish sage, who planned the boundaries between the Spanish and Portuguese possessions, in speaking of the Missions, gave accurate information regarding these settlements.

All Indians between the ages of eighteen and fifty years paid annually one peso per head to the Royal Treasury, and in addition, each tribe had to contribute 600 pesos.

In order to isolate their settlements from commercial intercourse with all other peoples, the Jesuits separated each tribe by deep pits and stockades and built big gates, under guards, at points on the roads leading to and from the settlement, allowing no one to enter or leave without a written order. They permitted horseback riding only to those of the Indians who looked after the livestock. The Jesuits had provided themselves with cannon and equipment and built adequate fortifications.

When the Jesuits refused admittance not only to the Indians and the Spanish authorities, but to the priests as well, it was the impression that they intended the organization of a Jesuitical empire. Azara says: "The dances which the Jesuits introduced among their tribes consisted largely of instruction in fencing and the use of the sword, as I have myself seen. The women were never allowed to dance."

The Jesuits were English, Italian and German, and the

few Spanish among them had neither office nor authority. The Spanish Government limited itself to telling the Jesuits, after a century and a half, that it was time to grant some liberty to the Indians by permitting them to have self-governing powers, the right to trade and transact business with the Spaniards, and in fact, that they should be extricated from the confinement in which they were kept like so many rabbits in a warren.

The Jesuits stated that the Indians were not capable of governing themselves and promised to gradually reestablish private property, which in fact did not exist, as everything belonged to the Order. Each family was assigned a small piece of ground for cultivation two days out of each week for their own benefit. But inasmuch as the Indians could not sell their produce the arrangement was of no advantage to them for the reason that the Order paid for their products just what it saw fit. In the end, according to the Indians, the Jesuits disposed of the products of these properties together with their own.

"It is beyond all doubt," says Azara, "that the Jesuits governed these tribes arbitrarily, they themselves not being responsible to any one, and disposed of the properties of the different settlements and the individual work of the Indians just as freely as was done by the Indian chiefs who succeeded them, though the Jesuits were more considerate, only requiring them to work half of the day, amused them with dancing, festivals and tournaments and supplied them with sufficient food and clothing. All needlework was assigned to the musicians, sextons and choir boys, as the women attended only to the knitting of the cotton."

Manufactures by the Indians of fabrics, cotton and tobacco, as well as mate (Brazilian holly), vegetables and medicinal herbs, were transported to other cities and there sold in order to bring other articles back. The churches, which were sumptuously adorned, consumed a large portion of the income.

A decree calling for the expulsion of the Jesuits from

their domains was issued on February 27, 1767, by Carlos III, but the mandate was not complied with until the following year for fear of an uprising. The Indians did not want to obey the Spanish civilian authorities who were in conflict with the clergy, and in all disputes upheld the latter. These disputes brought about the downfall of the missions and caused the scattering of the Indians throughout the forests, finally reducing their number from 144,000 in 1767 to only 45,000 in 1804.

Were the Jesuits good colonizers and did they prove good sponsors of civilization? I say, No. To civilize does not mean merely to feed and clothe and impart an appearance of culture, but it means enlightenment as to the duties and privileges that all free men have in order to stabilize society so that civil equality may make of each man a social entity capable of successfully contributing to the solidarity of a nation.

The Jesuits could have accomplished this after one and a half centuries of rule, but they failed, as is proven by the fact that on their disappearance all else went with them and only the ruins of the temples remained. They did not construct, for after one and a half centuries—according to themselves—the Indians were not capable of self-government.

"To deprive a people from practicing self-government because of incapability," says Macaulay, "is as irrational as it is to refuse to operate for cataract on the eye of a patient for the reason that he will not be able to at first see the objects before him, the retina not being used to the light, but which faculty can be acquired after training the eye as to distance by the necessary reaction on the optic nerve."

The same thing is true of the Paraguayan Indians of the time of Francia and López, who after forty years of domination had not organized even one tribe capable of self-government, but who governed by tyranny, notwithstanding the fact that this tribe by its material progress bore evidence of a modern race.

The Argentinian, Agustín Alvarez, says in one of his well-known works: "The races of mankind are not improved by their ethnical but by their mental transformation, for the ability to succeed does not take root in the skin or the bony framework of man; neither is man's value based, as is that of the ox, on the load that it pulls, value of its hide, tissue, fat and bone. Improvement in the breeding of livestock is merely physical, but the development of the human race must be accomplished through the spirit."

To quote Horace Mann: "The opinion of the most competent, most tranquil, most experienced instructors of the young, is, that we can within two or three generations through our school system and without undue sacrifice have this beautiful dream come true (he referred to the reformation of corrupted humanity) and see the best wishes of all philanthropists fulfilled. The value of the school is insuperable. It will before long, before the lapse of centuries, yes, within two or three generations, bring about the modification of the races. There are neither young nor old nations, neither are there superior nor inferior nations." And neither are the Latin people inferior to the Germans, as these latter in their delirium had come to believe, nor are the Latin races inferior to the Anglo-Saxon, or these to the Latin, whose highly developed culture has at times charmed and dazzled them, as is demonstrated by history in the alternating predominance of first one nation and then another.

Predominance comes during an historical period to the most highly intellectual, the most industrious and the most perseverant nation of that particular period. Japan, next to China, is the oldest civilized nation in the world, but having adopted the educational system of the Occidentals, it is to-day a young nation in the Eastern Hemisphere and its intellectual men are among the most renowned in medicine and other sciences. The Americans have demonstrated the truth of the assertion by Horace Mann, by transforming, in less than a quarter of a century, the mental development of

the Filipinos raised and educated under the antiquated political rule of Spain.

SOCIAL CONDITION OF THE INDIANS UNDER SPANISH DOMINATION

"No more miserable and humiliating condition of humanity can be pictured than was that of the Indians at work in the fields. One of the iniquitous laws of the colonies, the personal tribute of the Mitas (enforced service of Indians) remained in force after independence till 1857. From each settlement a certain number of indigenes was recruited annually to contribute during the year to the work in the mines, on the farms in the cultivation of the soil or the raising of livestock, and in the shops where the *tocuyo* (shirting) fabrics were designed. The Indians thus forced to serve were called *Conciertos*."

"Whoever consults the *Noticias Secretas* (secret notes) of Jorje Juan and Antonio de Ulloa, wherein the system of Mitas is portrayed as it was carried on during the latter period of the Colonies, and how without any material difference it existed until the middle of the nineteenth century, can feel that deep melancholia emanating from a clear vision of the abyss of human wickedness. Obstinate Indians were dragged to the shops' prison by tying their hair to the tail of the rider's horse. Only one of every ten of those thus forced to slavery ever returned alive."

"In order to still further torment the Mitayo (Indian subject to Mitas) and humble his last remaining particle of self-esteem they would further punish him by cutting his hair to the roots, which punishment was to him the worst of ignominy. All this painful discipline has created in the heart of the Indian not only the habit but the necessity of suffering. Whenever treated kindly he appears nonplussed and believes that he is being deceived. On the other hand, he becomes accustomed to the harshest tyranny, with the half-harrowing, half-repugnant meekness of a much abused

and despised canine, and as is often the case with the common watchdog that feels neglected and leaves home after a prolonged lapse of time between whippings."

"At the time of the abolition of the unjust personal tribute exacted under the rule of Robles, many were the Indians that became frightened at the new order of things and acted as if a revered tradition was being violated and became homesick for the old slavery days. Away from the spur and influence of chastisement the Indian is indolent and weak. No promise can be made that he will believe nor reward big enough to stimulate him. It is not within the scope of his understanding that labor is ennobling and should be voluntary. He has neither love of freedom nor idea of rights."

"The emancipation movement as regards Spain at the time of the liberal yet unfortunate uprising of 1809, also the ephemeral declaration of independence two years later, and finally the adhesion to the triumphal impulse of Bolivar's hosts, were the achievement of the few settled and cultured Creoles in whom the inspiration to be free was uppermost and ranked above all else. The idea of mother country and patriotic passion for same were conceived at the *hidalgos* (public meeting houses) of the cities where the traditional rivalry between '*chapetones*' (imported Spaniards) and Creoles was self-evident."

"The motley crowd of *indigenes* remained untouched by the idea and the love, even though it be sent forth as a horde or an army, its share of unredeemable blood to pay. Plebeian liberty did not obtain in them that heroic and genial incarnation which evolved into sculptural alignments within the breast of the *Gauchos* of the La Plata and within the plainsman of other parts of Colombia and in Venezuela. Even long after the revolution it often happened that the *Ganan* Indian of the haciendas, ignoring the existence of the nation, believed that the *mita* to which he was subject was imposed yet in the king's name."

"The revolution not inspired by the Indian was even less

of a reality to him. The change in his condition was negligible. Within the republic the Indian continued to acquiesce as the conquered race, the wretched clay upon which the social edifice is planted. The mestizo aims to deny his half of indigenous blood and endeavors to attest by his filial wickedness the purity of his lineage. The Indian clergyman with difficulty reaches the benefice. The university is a step-mother to him of humble birth. The plebeian Indian, like the horse changed from master to master, sees his state as a helot confirmed. He is mistreated and annoyed by the slovenly grouch of the streets. When the Negro slave finds his task growing burdensome he turns to the Indian transient and compels him to do his work for him."

"Cruelty that has perhaps been lessened by the law is kept alive through habit. The rapacious claw of the 'Corregidor' (corrector—magistrate) passed as had the vintage of blood of the 'Encomendero' (agent), but the whip for the Indian remains clutched in the right hand of the boss of the hacienda, the head man in the shop, the local doctrine leader, the uncivil and domineering curate, who also assumes executionership. His tyrants have trained him upon being lashed to rise and kiss the hand of the whipper and to say, 'Dios se lo pague' (May God reward you), and if it be the hand of the black slave that has mercilessly come down on his back, whether on his master's account or the slave's own hatred and iniquity, the Indian, the wretched Indian of South America, kisses the hand of the slave. So continues he in a darkened night, in the shadows of which the spirit casts not even a ray of enthusiasm, or of eagerness, nor even of idle curiosity. The unfulfilled promise, the lie, sordid fruits of weakness and fear, form the timid defense with which he endeavors to repress the march to martyrdom's excesses. Smiles of heavenly hope he sees not, as he knows not their radiancy, and the religion which taught him is to him nothing more than an unctionless monotone. Death to him means neither joy nor sorrow. Only the

ephemeral exaltation of inebriety brings forth from the depths of his slavery-bewitched soul, benumbed-like hobgoblins of daring and bravery, passionate phantoms displaying in the lightning rays of madness, the idol of vengeance."

"The air of nobility, emanating from illustrious birth or from the superiority of the profession, was maintained in all the purity of Spanish tradition, either through the pre-eminence of the families' descendants, of founders of cities and the dignitaries of the Colony, or the aristocratic aureola of the clergy, or the army or the academic degrees. All the occupations were of lower order; industrial work, the mechanic arts were assigned to Indians and mestizos or to the few foreign immigrants. Territorial wealth, perpetuated in fact on the society of colonial origin, was distributed among very few. That mountain beyond, one of nature's wonders, that far-off prairie to which no horse's gallop finds an end, that valley which could produce bread enough for an empire, are very often the property of one single man, rich feudal patrimony where the bent figure of the indigene represents the rustic who satisfies every obligation to the master. Numberless clergymen distributed among the settlements in convents, together with the multitude of secular ecclesiasts, caused the population the effect of the plant that is being attacked by ants.

"Also in contiguous hierarchy was the attorney, capable and only versatile personage acquainted with all phases of understanding as a politician, writer, poet, orator, and carrying wherever he went as the keys to universal knowledge, his Peripateticism, also his Latin. To complete the scene of the privileged fraternity, there was the soldier, the personification of a force, as a rule, uncultured and rough, but who acquired prominence through the laurels of emancipation and inclined to the leadership in politics, to which he had to offer some assistance at the first timid show of reaction against the all-embracing clerical influence."

"The aggregate of society thus constituted was that of a vast convent which, as in the time of the feudal lordships,

had near its fortified walls an abbatial hamlet which sounds of activities of disputes or festivities were lost in the lofty and austere majesty of monastical silence." (Pages from Rodó).

All the Indians of Bolivia had to pay tribute to the Spanish treasury in manner as follows: Those called *Originarios*, the most distinguished of the Indian settlements, owning land in the valley and on the *puna* (plateau), paid nine pesos and six reales (one real is about one eighth of a peso) per head per year. The *Agregados*, owning a very small portion of land in the valley or a larger one on the *puna*, paid seven pesos annually, that of the "*Forasteros*," who owned no land, four pesos annually.

They had established the *Caja General de Censos* (General Annuity Funds) for the purpose of paying tribute in case of epidemic or poor crops. The lands were assigned on a usufructuary basis and could never become private property. Tribute was expected only from the Indians, who should have been by right the owners of the lands. Whenever tribute was demanded from a Negro, a *Mestizo* (half-breed) or a white, the Court would exempt him, stating: "Having proved that he is not an Indian he is hereby exempted."

Bolívar abolished the law of tribute in 1825, but it was reestablished and remained in force until years afterwards.

The excessive mortality rate brought about by Spanish colonization of South America is briefly explained in the following lines:

"Though we were good, useful farmers we were sent into the mines, where they loaded us like so many beasts of burden carrying baskets of ore, and so making life for us down in the bowels of the earth harsh and unendurable."

The same system which decreed that landed property should never belong to the individual but to the State, prevailed in the empire of the Incas for thousands of years and was adopted by the Spaniards, who did not suspect that the modern Georgians were to come centuries after to find

this old-as-the-world system to be the panacea of all social evils. In Russia, just before the outbreak of the war which has recently come to an end, there were vast regions of millions of square kilometers ruled under the strictest communism dividing the land periodically in parcels allotted on a usufructuary basis according to the number of members of each family. It was practiced as the Peruvians did, as did also the Jews during their celebrated jubilees held every fifty years.

Mackenzie in his very interesting book, "Russia," describes the result of the system in that country in the following manner: "Nobody digs either a ditch or a well, nor plants a tree, nor constructs a durable dwelling, nor a fence, or any other improvement, for he knows he builds for someone else." The Georgians do not take into consideration the fact that if the land is valuable, it is due in almost every case to the accumulated work of man where one family has had the possession of it for several generations and has improved it continuously.

The most fertile fields of the La Plata and where the best livestock is raised owe their productivity largely to the industry of the settlers, who were obliged to root out and eradicate weeds, thorns, and thickets of all kinds, annihilate the beasts of prey, and at the same time defend themselves from savage tribes.

Where no inducement exists for man to become the possessor of the land he cultivates, the land will be of little or no value, as no one is willing to toil for the exclusive benefit of others.

At the time the slaves of Brazil were given their liberty, the Brazilian landowners, under the impression that the slaves were the only laborers, believed, or pretended to believe, that Brazil would suffer a terrible calamity because nothing would be produced. It was their opinion that the Negro no longer under the lash would not work, yet the reverse happened. Production increased as the effort of the freed Negro to do better work increased. The same

results would have been obtained had they decreed that each Indian work for his own benefit.

THE INDIAN PROBLEM

Such was the condition of the Indian of the Andean tribes of South America under Spanish domination, and it so remained until a few years ago. The laws enacted have had the tendency right along to better the condition of the Indian, for there have constantly appeared legislators who have been inspired by a sense of humanity and justice to improve their condition. Yet laws are impotent against the customs of tribes that for centuries have received their training in the conqueror's school of barbarism.

What could be expected of a conquering nation whose hero, Pizarro, the Conqueror of Peru, could neither read nor write? What could be expected of a cruel, ignorant, and fanatical army which only aspired to plunder? The Araucanos, indefatigable defenders of their native land, compelled the Conqueror Valdivia to drink melted gold and made him atone for all the crimes committed by his soldiers, who, like their leader, had only one desire as they conquered, and that was the accumulation of riches, even if it were necessary to decapitate millions of human beings.

The Indians of Peru, victims of the most abject slavery, the product of absolute monarchies, were unable to defend their soil against a handful of adventurers.

Following the overthrow of Spanish rule, the great Bolívar, through wise legislation, initiated the regeneration of the Indian, but being that the political directors, descendants of the Spaniards, had the same defects as their predecessors, the tendencies of the Liberator availed little or nothing. Even to-day the Indian desirous of living a free, untrammelled life is compelled to ascend the summit of lofty, glacial mountain peaks of 4,000 to 5,000 meters elevation looking after his small herd of llamas and alpacas. Should he venture to descend to the plains from his dwelling amid the clouds, he becomes the victim of a Government that

places him in barracks to equip him as a soldier. Should he hire out to work he becomes the victim of an employer who pays him a miserable wage of one quarter to one half dollar per day without meals. He starts to work at sunrise, after partaking of a scanty breakfast, works all day without a morsel of food, only now and then chewing on coca leaves to check his hunger.

Notwithstanding this condition, there are over 2,000,000 Indians in Peru who have nothing to subsist on. Yet the influx of hundreds of thousands of Chinese coolies is looked upon with favor, notorious gamblers who at night stake their earnings of the day before, and who are both morally and physically inferior to the Indian.

It is pathetic to find the Chinese hotels and lodging houses of Callao and Lima crowded with the lower element of the populace who are partly attracted there by the ridiculously low prices of meals, then to gamble away the few cents saved at the expense of their stomachs. The Chinaman's love of gambling is such that it is not uncommon to find the employer become the servant of his servant, the former having staked his entire hotel on one unlucky play of the night before.

The admission of the Chinese has been harmful and will prove even more so as time goes on, not only because the Chinaman is mentally and physically the Indian's inferior, but also economically, inasmuch as the Chinaman with his long and varied experience is a more successful farmer, knowledge which the Indian can in time acquire with his superior intelligence. The fault lies with the Governments which, absorbed in preoccupied politics, neglect those vital problems which should make the foundation and the bulwark of a nation.

Imagine what 2,000,000 farm hands trained in all the branches of agriculture could accomplish on soil so unusually fertile as that of Peru, where sugar-cane, cotton, and various other plants for which the soil seems to be particularly adapted, yield such good returns. What enor-

mous production this country would contribute to the world at large should it collect the energy of so many hands right at its doors, only awaiting the opportunity to be called by other more enterprising nations. When we turn to Argentina, with its copious production of 5,000,000 tons of cereals, which it places in European markets, and which is the product of work done almost entirely by 1,000,000 Italian laborers who have transformed the country from a purely live-stock raising community to first place in the world's granary, we can form a fair idea of what the evolution of Peru will be when it learns to utilize its idle millions.

Besides the resident laborers of Argentina, it has been benefited by the added experience of thousands of *golondrinas* (swallows) farm-hands transported directly from Italy, who engage in agricultural work during the winter of the northern hemisphere, and during three or four months of the austral summer season at the end of which time they return to Europe. The *golondrinas* have stayed away since 1914, and will remain absent till no one knows when, as many, perhaps, have gone with the departed ten million and more laborers for whom Europe now mourns and whom the whole world will miss. Should there be any extra hands in Italy, they will perhaps go to France, whose shops have lost 2,000,000 men in the recent war, or perhaps to England or to both. Argentina will therefore have a shortage of human working machines which have contributed to its present prosperity. It will lose tens of thousands of vigorous young men when French and Belgian industries start anew—where they can afford to offer a higher wage than Argentina because their products show a correspondingly larger profit. But Argentina could advantageously substitute Italian labor with Indian labor from Peru and Bolivia, the Indian being an agriculturist, has cultivated maize for centuries, is as a rule sober in his habits, and possesses endurance and unusual physical strength.

The Bolivian railroad now under construction, and which will connect Quiaca and Uyuni, will permit the transfer

of laborers from Peru and Bolivia to Argentina, something which deserves primary consideration in the service of the Bolivian-Argentine railway. This might not coincide with the Utopian idea of the Argentinos that this railroad will turn the Bolivian market to them, as they believe that there is nothing that Bolivia can export in either mineral or vegetable products that can afford the freight from Quiaca to the ports of Buenos Aires and Rosario, which are at a distance of about 400 leagues (1,200 miles more or less) from the Bolivian frontier by rail. The mineral and vegetable products will always be exported through the Pacific ports, excepting lumber, sugar, and coffee, which can be transported out of the country much more economically via Port Suarez on the Paraguay, opposite Corumbá (Brazil), a river port with service by the Lloyd Brazilian Steamship Line, which steamers connect with Buenos Aires, Montevideo, Rio de Janeiro and all ports of the Brazilian coast line. One very much needed improvement would be a railroad from Santa Cruz de la Sierra across the Bolivian Chaco in order that this market could be successfully developed, a fact which ought to interest the Bolivian republic above everything else.

It is of necessity that Peru and Bolivia consider both the utilization of the Indian and his intellectual and moral development as the primordial problem affecting his existence. How much better it would be for these two nations to solve the Indian question, than to employ the energy of their intellectual lights in disputing with their neighbors the Argentinos, Paraguayos, Brasileiros, Ecuatorianos and Colombianos over parcels of lands which can not compare in natural wealth to those that remain abandoned and unproductive within the confines of their native land.

We do not make mention of Chile, which country is in conflict with the countries of Peru and Bolivia, for the reason that this is an entirely different proposition involving self-love and national dignity. The illusory ambition of

seeking additional lands, is a universal malady. *Geographical vanity* seems to be a world-wide contagion. Spain has buried hundreds of thousands of her soldiers on African soil where she has covetously sought new lands to conquer, while at the very doors of the city of Madrid there lies a desert-like region untilled and worthless and which might as well be a part of the African desert so desolate and barren it is.

Italy with its maremmas, its pontin lagoons, its malaria on the outskirts of Rome as described in the bulletins announcing the manner of combating this terrible disease, and its Isle of Sardinia now almost deserted and which at one time provided the whole of the Roman Empire with its grain, seeks new lands in Abyssinia where the torrid heat of the sun would have ere this made victims of legions of Italian soldiers had not Menelik awakened them to the fact that they were merely chasing phantoms.

The Uruguayans have lost half of their territory by having it snatched away from them by the Portuguese and their descendants, the Brazilians. This, however, does not affect the size of their territory, inasmuch as their gauchos and capitalists have literally taken possession of the province of Rio Grande where they own vast areas of land, and the lack of additional territory also is made up by their attractive Montevideo, the residential city of all the big land-owners, as it is also the principal port of exportation for their abundant livestock production.

FIRST SPANISH SETTLEMENTS IN URUGUAY

The first settlements of the Banda Oriental (Eastern Bank) had as their object the defense of the territory against the Portuguese who invaded it to carry off livestock into Brazil to San Paulo, which was founded by criminals of all sorts. These were a constant menace to Spanish colonization.

Disputes over the
Territory of
Oriente-Uruguay
between Spaniards
and Portuguese

The Portuguese founded the Colony of Sacramento in 1680 opposite Buenos Aires, from which place they were driven out by the Spanish Governor. The Portuguese Governor was made prisoner and deported to Lima. Hostilities continued until 1681 when the treaty between the Cortes of Spain and Portugal decreed the return of the Colony to Portugal until such a time as the boundaries of the Spanish and Portuguese colonies be determined.

In 1704 the Spaniards of Buenos Aires received instructions from the Metropolis to dislodge the Portuguese from the Colony which they proceeded to do, compelling the Portuguese to evacuate. But, in 1715, by the treaty of Utrecht, it became the possession of Portugal once again. Later, in 1720 and 1722, they tried to occupy Montevideo, but failed.

In order to prevent further assaults by the Portuguese, Zabala, Governor of Buenos Aires, founded the city of *San Felipe y Santiago de Montevideo* in 1726. The Portuguese of the Colony continued their incursions from all sides but again without success, and finally by the treaty of 1750 between Spain and Portugal the Colony was ceded to Spain. This treaty fixed the Ibicuy River—tributary of the Uruguay—as the boundary between the Spanish and Portuguese possessions. Notwithstanding the treaty, the Portuguese occupied the Colony until 1762, when the Spaniards resorted to a twenty-five day siege and forced the Portuguese to evacuate.

Zaballos, then Spanish Governor, proceeded east and took the fortifications of Santa Teresa and San Miguel, which the Portuguese had built on Spanish soil.

The Ibicuy boundary should have been mutually accepted as the dividing line between the Republics of Uruguay and Brazil, but the latter, contrary to all justice, extended its domain farther south as far as the Cuareim River. This treaty was endorsed by and imposed upon Uruguay by Argentina under the government of General Urquiza in 1851. The Government of Uruguay declared that it ac-

cepted the imposition inasmuch as it lacked the necessary means to defend its rights.

VICEROYSHIP OF RIO DE LA PLATA FOUNDED IN 1776

The Viceroyship of the La Plata River was established in 1776, taking in addition the gubernatorial districts of Paraguay and Tucumán, under Viceroy Don Pablo de Zeballos, who took possession of the Colony, and in so doing demolished its ramparts.

The treaty of 1777 granted to Spain all of the dominion of the Banda Oriental of Uruguay. Zeballos, a progressive ruler, divided the territory into eight districts, each under an intendent, and gave the settlers permission to trade with outsiders, which until then had been prohibited.

All merchandise that had come to Uruguay in the past came through the Ports of Panama and Portobelo, thence to Potosí to La Plata, its price increasing from 800 per cent to 1,000 per cent. This liberty of commercial activity gave importance to the Banda Oriental for its abundant livestock.

Hostilities were again renewed between Spain and Portugal in 1800, the Portuguese taking possession of the Misiones Orientales (Eastern Missions) of Upper Uruguay, which they retained according to the treaty of peace that followed. This started the boundary disputes between Brazil and Argentina, which were submitted for decision to the President of the United States of America only a few years ago.

INVASIONS OF THE LA PLATA BY THE ENGLISH

The English having profited by their triumph at Trafalgar in 1805, attacked in 1806 the city of Buenos Aires with an army of 6,000 men, and as no resistance was offered, due to cowardice on the part of Viceroy Sobremonte, the English quickly took possession of the city.

The Spaniards of Montevideo soon after planned the expulsion of the English from Buenos Aires, and embarking



at Colonia, under command of Liniers, they descended near the city and with the cooperation of the men and women residents advanced upon the invaders, and after a bloody struggle the English finally capitulated.

In his proclamation, the leader of the patricians stated: "The men born in America are not inferior to the Spaniards or Europeans and no one surpasses them in courage." Viceroy Sobremonte was repudiated by the people master of their own destinies, and named Liniers in his place.

The defeat of the English caused great enthusiasm in Spain, and the Cortes awarded as a recompense to Montevideo, a coat-of-arms and the title "Muy Leal y Reconquistadora Ciudad" (Most Loyal and Reconquering City).

The English returned and captured the coveted port of Maldonado at the mouth of the La Plata River and marched against Montevideo with 8,000 men, laying the city waste and capturing it after a slaughter where the English themselves suffered great losses. This battle took place during the month of February, 1807. In July of the same year, the English advanced upon Buenos Aires, but the opposing forces surprised them by the stubborn resistance they offered and forced the English to retreat, also compelling them to surrender the sea coast of Montevideo, which they abandoned on the 19th of the following September.

The short stay of the English at Montevideo proved beneficial to the native South Americans, as it helped them to foresee the realization of their aspirations for a better government and the assurance of political and commercial liberty. It was then that the first daily appeared in the La Plata region.

POPULAR MOVEMENTS FORERUNNERS OF THE SOUTH AMERICAN REVOLUTION

The spirit of independence among the American settlements had been cropping out for some years, and in reference to its manifestations the Spaniard Antonio Juan de Ulloa said in 1731: "It seems improper that among people

under the same Government and having the same blood coursing through their veins that there should exist such enmity, ill-will and hatred, and that the cities and large centers of population should be the scenes of discord and continued opposition between the Spaniards and the Creoles."

Two revolutionary movements were started in Venezuela in the years 1711 and 1713, the first one proclaiming a native born King, and the second was an uprising by the Creoles against the monopoly created by the *Compañía Giupuzcana* of Caracas.

In 1730, the Mestizos of Cochabamba secured the right to elect *Alcaldes* (Mayors) and *Corregidores* (Town Magistrates) from among the Creoles and to the exclusion of the Spaniards. In August, 1809, the natives of Quito failed to recognize the Spanish authorities ruling over them and established an assembly under the title of "*Soberana*" (Supreme). During the following May, the Creoles of Chuquisaca in Bolivia deposed the Spanish authorities and organized a governmental assembly. Two months later the natives of La Paz rose up in arms under the cry "*Mueran Los Chapetones*" (Death to the Spaniards), and also organized a governmental assembly and in their proclamation stated: "The time has now come to raise the banner of liberty over these unfortunate colonies." These two revolutions were crushed by the Spaniards, who, following their established precedents, put the leaders to death.

In 1809 Montevideo was the scene of a conspiracy wherein Don Joaquín Suárez, Larrañaga, Pérez, Barreiro, Montemroso, and other patriots planned to strike a blow to Spanish rule in the La Plata region.

Mention must be made of Miranda, who had ten years before organized in the City of London the association called *Gran Reunión Americana* (Great American Union) for the purpose of framing a republican constitution for the various Spanish colonies. Among the prominent members of the Society were Alvear and San Martín, natives of Argentina;

O'Higgins, Chilean; Nariño and Montúfar, Granadinos (from U. S. of Colombia, at that time Nueva Granada); Rocafuerte, Ecuadorian; Caro, Cuban.

The so-called "Guerra de los Comuneros" (War of the Comuneros-party opposed to the tyranny of Carlos V) of Paraguay in 1723, was the expression of an enraged public at the city of Asunción when the then Governor Victoria, an appointee of the Spanish Crown, following a custom of the Metropolis, gave up his office, for a monetary consideration, to Balmaceda. In consequence of this, the Cabildo of Asunción arrayed itself against the Governor and opposed him with unusual zeal. The Royal Audience of Charcas sent Antequera, a native attorney and prosecuting member of the Audience, to settle the dispute. As an American, Antequera favored the Cabildo and decreed the imprisonment of the Governor, who lost no time in leaving the country.

The Cabildo represented the wishes of the people against the authority and tyranny of the Metropolis. The Viceroy of Peru, on hearing the complaint of the deposed Governor, ordered Antequera to reinstate him in office, to which Antequera replied that he would not respect the order, as *the authority of the people was superior to that of the King.*

In support of the stand that he had taken, Antequera caused Paraguay to revolt, the people investing him with the powers of Governor in opposition to the King's will, just as the Comuneros of Castilla had done under the command of Juan de Padilla, in defense of Spanish municipal liberties against the tyranny of Carlos V, son of Juana La Loca (Jane the Insane) and Emperor of Germany and King of Spain, that historical figure whose record so closely resembles that of the German ex-Kaiser, now a refugee in Holland.

Antequera was prepared for the Spanish forces which were marching against him, decisively defeating them with a loss of 800 of his own men. On withdrawing from Paraguay, he assembled the Cabildo and advised that opposition be made to the entry of the new Spanish Governor,

Antequera, being later apprehended, was tried and executed in Lima in 1731.

Turning back two centuries, 1540, Gonzalo Pizarro, in Peru, revolted against Spain, and Carbajal, his next in command, ordered the royal banner burned. They were both arrested and summarily executed. From this time onward the smouldering spirit of independence kept constantly growing and developing, finally preparing the people for the memorable outburst recorded as the Pronunciamiento (uprising) of Buenos Aires on May 25, 1810 (South America's Fourth of July), when the people at a public demonstration, which took place in the city of Buenos Aires, proclaimed a governmental Junta.

The leaders of the revolution pledged themselves not to recognize any other government than that of Fernando VII—even if such were not their intention.

The people of Caracas in Venezuela had one month before, on the 19th of April, dismissed the Spanish rulers and appointed an Assembly to govern in the name of Fernando VII. Chile did likewise on the 18th of September following.

These manifestations of discontent were further incited by the proclamation issued by Napoleon I, Emperor of France, in behalf of his brother Joseph Bonaparte for the throne of Spain while the Emperor was holding Fernando VII, the legitimate owner of the Spanish Crown, a prisoner at Bayona. This was the cause of the Spanish revolt at Madrid on the 2nd of May when the Supreme Governmental Assembly at Sevilla was organized to govern in place of the imbecile King, Fernando VII.

The Buenos Aires Junta two days after its organization sent out a proclamation inviting the settlements to appoint Deputies, and on the strength of this invitation the Royalist Party invited the Assembly to recognize the Board of Regency of Spain. Liniers in Córdoba revolted in support of this pretension of the Crown, was promptly subdued by the Assembly forces, and he and his companions executed in the month of August, 1810.

Montevideo, a well fortified city under the Realistas (Royal Party), was opposed to the revolution, and, on the arrival of the Viceroy Elio, the hostilities with Buenos Aires began.

The Banda Oriental of Uruguay declared for the revolution, with Viera and Benavides at Ascencio near Mercedes, at the head, and supported by the garrison of the city of Mercedes under the command of Fernández. Artigas, later commander of the Orientales, joined with a strong force, which increased the army of patriots to 3,000 under the command of Belgrano, who was later succeeded by Rondeau.

The Artigas detachment was rushed to Montevideo, meeting the Spanish forces near Las Piedras where he engaged them in battle, annihilated them, and made their leader, General Posadas, prisoner. This was the first battle, "Batalla de Las Piedras," in 1811, which was won by South Americans in the war of independence and which gave General Artigas, Commander of the Orientales, increased prestige.

Not long after, Artigas, together with General Rondeau, who commanded the Argentine forces, laid siege to Montevideo, but soon withdrawing under resolution by the Argentine government, claiming that it was imperative that the army be sent to Perú.

EXODUS OF THE PEOPLE OF EASTERN URUGUAY

The Orientales, on being left with only their own forces by the Argentinos, who had previously signed a treaty with the Spanish Viceroy of Montevideo, were obliged to combat not only the Spaniards but also the Portuguese, who had invaded the territory of the Orientales to protect the Spaniards, their temporary allies.

Artigas, as the leader of the Orientales, protested against this treachery of the Buenos Aires Government and withdrew to the interior accompanied by the patrician families, including all the women and children and the aged, all of

whom were giving up their native land and suffering untold hardships rather than become a foreign master's slave. This noble act of collective heroism is known in South American history as the "Exodo del Pueblo Oriental del Uruguay" (Exodus of the People of Eastern Uruguay).

Artigas, with his small army and his people, had to cross to the western bank of the Uruguay in order to save themselves from complete destruction on being attacked by the Portuguese.

THE ARMY OF ARGENTINA CROSSES THE URUGUAY TO COMBAT THE PORTUGUESE

The Buenos Aires Junta protested against the entry of the Portuguese army, which, according to the treaty, should have returned to Brazil. Being unable to come to an immediate settlement, the war with the Spaniards and Portuguese was started, and accordingly the Argentinos sent an army under Rondeau against Montevideo.

Artigas of the Orientales, as per agreement entered into with Rondeau, brought his forces and formed the left wing of the army of patriots and began the advance on Montevideo.

On April 5, 1813, Artigas brought together delegates from among the Orientales who, in Congress assembled, recognized the authority of the Buenos Aires Junta, appointed a municipal body entrusted with the internal governmental functions of the province, and sent five deputies to the general Congress which was to convene in Buenos Aires. These deputies had instructions to ask for the absolute independence of the provinces of the La Plata and the formation of a Confederacy of all of them, constituted under a republican form of government. These were the celebrated instructions of 1813, which had as their fundamental principle, on petition by the Oriental Deputies, the immediate declaration of absolute independence of the colonies, permanently relieving them of all obligations of fidelity to the Spanish Crown and the family of the Bor-

bones, and that all political connections between the colonies and Spain be and remain completely abrogated. They were not to accept, in substitution of the absolute regime, any other than a republican form of government nor any other system than the "Confederación de los Estados Soberanos del Plata" (Confederacy of the Sovereign States of the La Plata). The celebrated instructions of 1813 came newly to light in 1867, having been found at Asunción during that year and published in 1878.

Historians, both friends and enemies of Artigas, commented on them without knowing what they really were. These instructions form the basis of a constitution patterned after that of the United States of America. Such were the views of the leader of the Orientales, though the form of government that those people should have who still called themselves subjects of Fernando VII had not yet been defined.

On Congress refusing to accept the Oriental Deputies, Artigas petitioned the Argentine General Rondeau, head of the army, for a new edict on the election of Deputies, and, according to the Argentine government, elections should be held at the encampment, or general headquarters, of the Argentinos, on the 8th of the following December.

Thus was elected the Provincial Representation, which appointed three Deputies to the Congress of Buenos Aires and a municipal assembly of three members. This election was protested by Artigas, inasmuch as it did not represent the true wishes of the people, besides the fact that it had been conducted under the pressure of the army of Argentina.

Besides the 5,000 Orientales under Artigas, there remained just a few lukewarm citizens, as are found everywhere, who prefer a life of ease to making sacrifices for principle, in most cases the tranquil and peace-loving residents of the cities. So, what the group of Argentine citizens assembled at the Argentine encampment under Argentine influence, resolved, was not the opinion of the Orientales, and Artigas did right in protesting as he did.

This disagreement with the government of Buenos Aires brought about the separation of the Orientales from the besieging forces on the 21st of January, 1814. The rejection of the Deputies sent by Artigas in 1813, was the first demonstration of the narrow-mindedness of the Buenos Aires Junta or Committee, which desired complete and blind submission to its mandates, not taking into account the fact that they themselves, as a ruling body, were not a direct product of the popular will, but of a small coterie self-styled "Government of the Revolution." The same privilege belonged to Artigas, who was publicly known as the leader of the Banda Oriental. The government of Buenos Aires could not object to the Oriental representation as designated by the leading citizens of the country, while the members of the government were self-appointed, and they exercised authority without consulting the various provinces.

The city of Montevideo surrendered on the 20th of June, 1814, with 5,000 men and 300 cannon.

Zorrilla de San Martín, in speaking of the revolutionary spirit of the day, said: "Had we time at this moment to traverse all of the regions of America and acquaint ourselves with the revolutionary condition, we would find it useful. The sun of liberty appears to be sinking. The triumvirate government of Buenos Aires, without thought or fixed purpose, gropes in the dark, seeking or waiting for the man who never comes, and who should be recognized by his crown of gold. The Constituent Assembly cannot constitute anything as it lacks abiding faith. It does not declare independence, and much less will it adopt any symbols, coat-of-arms, or its own money, but neither does it abandon the Spanish flag—the royal flag—for it is bound to the ancient Metropolis by a traditional monarchical spirit. It will not burn down the fleet, but will calk it instead for the probable return to the port from whence it came. It will enact important reforms, but within the Spanish organism. It is somewhat similar to the constituency of Cadiz and nothing more. We need not hold

it responsible for this, neither shall we try to lessen its renown. It was to be expected, it is humanlike. Artigas, who was more of a seer than a sage, dictated his instructions of the year 1813. With these instructions or fundamentals, Artigas with the same confidence that led Washington and Jefferson, drafted the chapters of the South American gospel. At no place in austral America had a similar declaration been written."

"Fernando VII will continue to rule morally in our midst. Belgrano and Rivadavia will go to Europe within a year to recognize Carlos III. There they will meet Sarratea, Argentine General, but they will not come to an understanding and only failure will they find. Belgrano, disappointed in Europe, will plan to crown a descendant of one of the Incas kings. It is essential that he be a king. The declaration of independence of the united provinces of the La Plata will be effected only three years after, on July 9, 1816, by the Tucumán Congress, and this will be the glorious day of Argentina."

"The Tucumán declaration was made nevertheless after delays, fear, and hesitation, and the very same próceres (illustrious citizens) who sanctioned it, far from declaring it like Artigas as the substitution of the colonial regime on a republican basis, they importuned at that time and subsequently for the establishment of a European dynasty on the La Plata."

"What would the noble republic of Argentina give to-day, what would we, all the sons of the La Plata give, to see embodied in the records of the Tucumán Congress, the instructions of Artigas?" ("Epopeya de Artigas.")

ARTIGAS'S INSTRUCTIONS OF 1813

Which were presented by the Deputies of Eastern Uruguay before the General Constituent Assembly of Buenos Aires

1st. To demand the declaration of absolute independence for these colonies, and cessation of all obligations of fidelity to the Crown of Spain.

2nd. To accept no other system than a confederacy calling for a covenant of reciprocity with the provinces which make up the State.

3rd. To promote civil and religious liberty within all its conceivable bounds.

4th. That each province establish its government on the above basis besides that of the Supreme Government of the Nation.

5th. Both national and provincial governments to be divided into Legislative, Executive, and Judicial departments, each one independent of the other in authority.

6th. These three branches are never to be united, but will act independently of each other.

7th. The Supreme Government to be concerned only in general State matters. Other matters to be handled specially by their respective provincial government.

8th. The territory now occupied by the people of the eastern coast of Uruguay, as far as the fortress of Santa Teresa, will constitute one single province called *Provincia Oriental* (Eastern Province).

9th. That the seven Mission villages, also those of Batoví, Santa Tecla, San Rafael, and Tacuarembó, which are occupied by the Portuguese, to be reclaimed when the proper time comes, and as territory which has always belonged to this province.

10th. That this province for the present enters into a separate binding alliance of friendship with each one of the others for their common defense, protection of their liberty, and for their mutual and general happiness, each in turn binding itself to assist each one of the others against all violence or attack against all or any of them for reason of religion, sovereignty, commerce, or any other pretext whatever it might be.

11th. That this province shall retain its sovereignty, liberty and independence, all powers, jurisdiction, and privileges which shall not expressly be delegated by the Confederacy to the united provinces in Congress assembled.

12th and 13th. The ports of Maldonado and Colonia, with free access for the importation of merchandise and the exportation of fruits with the corresponding custom-house duties.

14th. That no tax or duty be imposed on articles exported from one province to another, nor any preference given through regulation of commerce or revenue to the ports of one province over those of another, neither are the vessels which are destined from this province to another to be compelled to enter, anchor, or pay duty in still another province.

15th. Not to permit the enactment of any law for this province covering property of foreigners who die intestate, or covering fines and forfeitures which formerly applied to the King, or on territory of the latter, as long as it does not by ordinance determine to what funds to have same applied to, as the only department legally entitled from its economical jurisdiction.

16th. That this province should have its territorial constitution, with the privilege of sanctioning the general constitution of the United Provinces, as would be drafted by the Constituent Assembly.

17th. That this province shall have the right to increase its regiments to the number required, name the officers of companies, regulate its militia for the protection of its liberty, not violating the right of the people to keep and possess arms.

18th. That military despotism be duly and completely annihilated by constitutional measures that shall insure the inviolability of the people's sovereignty.

19th. That the seat of government of the United Provinces be of necessity and indispensably situated outside the city of Buenos Aires.

20th. The Constitution shall guarantee to the United Provinces a republican form of government, and shall insure each one against all domestic violence, usurpation of its rights and liberty and sovereign security.

The above are the essential articles of the proposed con-

stitution, which Artigas, as leader of the Uruguayans and the people of Uruguay, wanted as their Federal Constitution for the United Provinces of the Rio de la Plata. These represent the principles of the Constitution of the United States of America, which were later adopted by the Argentine Constitution of 1816.

Had these principles been accepted since 1813, we would not have had to regret the bloody civil wars between the Orientales and the Porteños (residents of Buenos Aires), and between Artigas and the Directorate of Buenos Aires, and which acceptance would have made the Uruguayan Republic an integral part of the United Provinces of to-day.

The Deputies of Eastern Uruguay were not admitted to the Constituent Congress or Assembly for the reason that the Election Ordinance proclaimed by the Triumvirate, which exercised the executive power of the nation by its Article No. 5, prohibited the Deputies from receiving imperative orders as national deputies. None of the provinces had taken part in the preparation of this ordinance, as the Triumvirate, following Spanish practice, really believed that the Buenos Aires government, as the heir of the Viceroy, could dictate measures of a general character without the consent or opinion of the different settlements constituting the nation. The government of the Triumvirate was aware of the opinion of Artigas, as he had expressed it to General Rondeau, to the effect that it was his aim to disregard the interference of Buenos Aires in the Oriental province soon after the termination of the war.

Artigas so arranged the Instructions as to provide measures to secure the autonomy of the Oriental province, while the Porteños took measures to defeat his purpose. It is perhaps surprising that Artigas should have given instructions to the Deputies; but, in fact, it was nothing out of the ordinary, as it was a case wherein the people were in accord with their leader as well as with the Deputies, and they were all in favor of the autonomy of their province. The idea of autonomy had been fostered in Artigas's mind

since 1811, when, in a communication to the Paraguayan government, he stated: "*The Banda Oriental is the sister, the ally, of Buenos Aires, but it has its own boundaries, which have been pointed out by nature.*"

THE WAR BETWEEN ORIENTALES AND PORTEÑOS

The war between the Orientales and the Porteños—the Uruguayans and the residents of Buenos Aires respectively—broke out soon after the seizure of Montevideo. This war was provoked by the intolerance of the people of Buenos Aires toward the spirit and inclination shown locally among the Orientales. The Argentine provinces of Santa Fé, Córdoba, Entre Rios, and Corrientes, on accepting the protection offered by Artigas, seceded from Argentina. Shortly after the secession of these provinces, Director Posadas started peace negotiations with Artigas, and on the 17th of August drafted a decree revoking a former one fixing a price on Artigas's head, acclaiming him in the later decree a faithful servant of the mother country, bestowing upon him the rank of Colonel, and conferring on him the office of General Commander of the Oriental campaign.

Peace did not last very long, for on the 1st of January, 1815, the forces of the Orientales, under Rivera, met those of Buenos Aires at Guayabos, under the command of Dorrego, where the latter were completely routed. It was an encounter of brother against brother, as had been that of Carreras and O'Higgins at Maipo on August 26, 1815, and that of Bolívar and Castillos, at Cartagena, on the 12th of December, 1814.

The government of Buenos Aires having changed hands, orders were given for the dislodgment of the Argentine forces from Montevideo, which was effected, and the withdrawal of the Argentine troops completed on the 25th of February following. The city was then occupied by the forces of the Orientales, who hoisted the first patriotic flag on the La Plata River, which has been called the Flag of Artigas, consisting of one white between two blue stripes, and a red

stripe diagonally crossing the other three. The first national coat-of-arms of Uruguay was adopted the same year. This emblem had as its center a balance—symbol of equality—and beyond, the radiant sun around which was the motto: *"With liberty neither do I offend nor fear."*

Following the fall of the Argentine government under Alvear, a provisional law was enacted on May 5, 1815, which directed the installation of the Tucumán Congress, which proclaimed the Independence of Argentina.

DISCORD AMONG THE LEADERS OF ARGENTINA

The deep-rooted differences between Artigas and the government of Buenos Aires had become pronounced even among the leaders of "Mayo" (Argentina's month of Independence), as is described by Mitre, the reputed Argentine historian, in his story of Belgrano, as follows: "Hardly had a year elapsed when the revolutionary arena was destitute of its most renowned leaders—Moreno, the inspiration of the revolution, died while at sea; Alberti, member of the Mayo commission, died before he saw his work completed; Berruti and French, the two political orators of the celebrated 25th of May (Independence Day), had been expatriated as of the criminal class; Rodríguez Peña, the energetic force of the preaching campaign which preceded the revolution; Ascuénaga, who had so efficiently coöperated in its triumph; Vieytes, the indefatigable companion of Belgrano in the tasks that prepared the change of 1810; all of them ignominiously persecuted, and whose friends of other days referred to them as frenzied fanatics, frantic democrats, expatriates, moral perverts, blood-thirsty plunderers, infamous traitors, rebels, low-lived, cynical, seditious insurgents, poison ivylike, and corruptors of the people."

Zorrilla de San Martín says: "That struggle will continue indefinitely, it will continue in a rage and implacable, and the man will not be there until the tyrant appears; revolutions, mutinies, tumultuous disorders, political conspiracies will follow each other without interruption within that

chaotic nucleus where the political rulers will rise and fall—thanks for this, as in many cases, to intrigue—betraying the lofty interests of the South American Independence.

“It is not then possible that the capitán of blandengues (old-fashioned regiment), the man of sincerity, Artigas, will be a party to it, nor will he swear thereto the unconditional submission of his people to any faction. He is the order; he comes to ask for means to liberate his country, and will accept whatever means are given him and from whomsoever he receives them, because he is ready to liberate it with those men, without those men, and against those men should it become necessary.”

These remarks of two historians of the La Plata give a complete idea of the grievous discords which held sway within the element that directed the revolution, and they also explain sufficiently well the state of anarchy which prevailed among the governing heads, just as it has happened during momentous events which have revolutionized the world. Add to this the want of political education and of party discipline, as well as ideas of assumed authority inherited from the mother country and incompatible with political liberty, and you will form some conception of politics at that time. A group of well-meaning citizens, yet arrogant and ill-prepared to govern, imposing their will on the great majority of the citizens who were not heard in any manner.

The haughtiness of Artigas is explained in the fact that he was the leader of the Orientales, the most fertile land of warriors, the capital of which—Montevideo—proudly displayed the motto, “Muy fiel y reconquistadora ciudad,” and which had been and still was the best fortified place of the Rio de la Plata, and the rival of Buenos Aires.

Artigas and the Orientales could not be mere satellites of the Committee which had assumed power. “The Banda Oriental has boundaries, she is the sister, the ally, to Buenos Aires,” Artigas had said in his note of December 7, 1811, which was read publicly at the City of Asunción in Para-

guay, amid the acclamations of the people, and adding: "The Orientales have sworn an irreconcilable hatred to all forms of tyranny, and have sworn not to lay down their arms until every foreigner leaves the country."

Artigas, desirous of securing autonomy for his loved Provincia Oriental, wished to embody in his instructions a federal constitution patterned after that of the United States of America, while on the other hand, individuals at the head of the Buenos Aires government, descendants of good Spanish stock, self-constituted authorities, could not conceive any other plan except one on the Spanish style, with all the exaggerated ideas of a unitary and despotic centralism as formulated by Carlos V.

THE ARMY OF ARGENTINA REBELS AGAINST THE BUENOS
AIRES GOVERNMENT, INSTALLING GENERAL RONDEAU
AT THE HEAD

General Alvear, not through his meritorious accomplishments—he being a very young man at the time—but through the intrigues which were in vogue at the time, was appointed General of the Army of Peru, but the army leaders of Alto Peru refused to recognize him as such, thereby establishing a regrettable example of insubordination. The Army of Peru rose up in rebellion against Alvear on the 19th of December, 1814, demanding the continuance of Rondeau. Director Posadas, in view of the disobedience shown his government, renounced his authority on March 9, 1815, but against all discretion the Constituent Assembly entitled Logia (lodge) Lautaro, which was a sort of political masonic lodge, named Alvear as Director, whose position became indefensible, since his defeat by Artigas with Dorrego as Lieutenant, and since the army disregarded him.

In the meantime, Belgrano and Rivadavia were searching Europe for a Prince to occupy the throne of the Provincias Unidas (United Provinces) independently of Spain. The monarchical scheme was shared by San Martín, Belgrano, Rivadavia, Sarratea, and Puyrredón. Director Posadas

comment was, "What difference does it make whether the ruler-to-be be called Desk, Table or Bench, Emperor or King?"

Following the battle of Guayabos, the government of Buenos Aires had sent ambassadors to arrange terms of peace with Artigas, peace being endorsed by Artigas under condition that the City of Montevideo be surrendered and the forces withdrawn, which was accepted by Buenos Aires, and its forces evacuating on February 27, 1815, as before stated.

Alvear would not give in, and signed a communication which placed the provinces of the Rio de la Plata under the authority of England, but this note, which was to have been delivered by Minister Garcia to Strangford, failed to be delivered, Garcia limiting himself to state to the English Minister that the Provinces of the La Plata had depended on the support of England in order to save themselves from falling into the clutches of Spain. A subsequent revolution in Buenos Aires destroyed the power of Alvear, who sought refuge on an English battleship, and the Constituent Assembly dissolved.

The United Provinces of the La Plata, in congress assembled at Tucumán, declared their independence on the 9th of July, 1816.

THE LAST PORTUGUESE INVASION

The Portuguese invaded territory of the Oriental province with an army of 10,000 men, commanded by Lecor, for the purpose of expelling Artigas and taking possession of the territory comprising the Banda Oriental. The Oriental forces, though weakened, offered stubborn resistance, and Director Puyrredón intimated to the invader that the territory should be abandoned, and proposed to Artigas his assistance, on condition that the Oriental Division render obedience to the Directorate and to the Congress, and that the Argentine flag be hoisted instead. Artigas most emphatically opposed the proposition, ordered the Argentine

document to be consigned to the flames, and started preparations for the defense of his country. We quote from Artigas's note, in answer to the Argentine proposal, the following: "*The leader of the Orientales has at all times demonstrated that he loves his country too well to sacrifice this noble patrimony for the contemptible price of necessity.*" He gathered 4,000 men, who were unable to check the advance of the Portuguese into Montevideo, which had been abandoned by its small patriotic garrison.

During the rule of Puyrrredón, the political parties were divided into Unitario and Federal. The Federal's pretension was that the province of Buenos Aires, which yielded larger returns, should not be under the national government, but that it be governed under autonomy, or in other words, he was asking for just the same conditions that the Banda Oriental of Uruguay wanted. Among the leaders of the Federal Party were Dorrego, Agrelo, General French, the Anchorenas, and other influential personages. They had as their organ a daily called *La Crónica*, where it was claimed that the Director Puyrrredón was implicated with the Portuguese who had invaded Uruguay. This expose gave an excuse to Puyrrredón to have them deported to the Antilles, together with the Oriental patriots, Colonels Pagola and Valdenegros, and other men of distinction. On arriving at Baltomire, the deported patriots issued a manifesto reading: "What is this crime of ours if among the many facts that confront us we have believed that *the government is implicated in schemes of perfidy and treachery, and that it had called and entreated the Portuguese to invade the Oriental territory.*" It is not strange therefore that Artigas should have believed Puyrrredón to be a traitor.

THE ORIENTALES ABANDONED BY THE ARGENTINOS

After several engagements with the Portuguese, Artigas proceeded to Entre Rios to secure reinforcements in Argentina, but instead of assistance he was received by the chief-tain Ramírez, his former protégé, in a hostile and warlike

attitude, and who, in a consequent encounter with Artigas, defeated the latter, who was compelled to withdraw into Paraguay.

Artigas, an unnoticed hero, was slandered by nearly all the Argentine historians, but his instructions of 1813, which were newly brought to light in 1868, when they were found in the city of Asunción, together with other documents bearing his signature, place the leader of the Orientales among the first statesmen of America, both in thought and action. (Refer to the Book, "Instructions of the Year 1813," published by Miranda, Libreria Nacional, Montevideo, 1916.)

OPINION GIVEN BY PRESIDENT MONROE'S COMMISSION TO ARGENTINA IN 1818 REGARDING ARTIGAS

The testimony given by the United States Government Commission, which was sent to Argentina during the Monroe administration to study the political situation at the time the Argentine government asked of the great northern republic to recognize the independence of the United Provinces of the La Plata, proves the truth of our statements. The members of this commission who went to Argentina aboard the frigate "Congress" in 1818, were Cesar A Rodney, John Graham, and Theodore Bland. President Monroe, on explaining to the United States Congress the purpose of this commission, officially requested that provision be made for the necessary funds to defray the expenses of the said commission. It was at the memorable session of the United States Congress in March of 1818, during the five days from March 24 to 28, which were exclusively devoted to the Argentine matter, that Clay was inspired to express the following sentiment: "Artigas appears to be in truth, a republican, a man of strong mind and strong understanding, brave, active, intelligent, devoted to his country, and possessing the entire confidence of the people of whom he is chief." (Smith of Maryland, U. S. A. Congress, March 28, 1818.)

It was at the most critical period of the struggles of Artigas and his brave gauchos, trapped as they were by their enemies, that the North American commission arrived.

Clay maintained that instead of a commission, a government representative should be sent, and that the independence of the Spanish-American republics should be recognized. The government's attitude was to defer recognition until receipt of report, to which Clay answered by quoting Washington's remarks: "Born in a land of freedom, my fervent prayers and best wishes are irresistibly roused wherever I see an oppressed nation break the barriers that separate her from freedom." "The United States of America, Clay continued, "must not wait for the Kings to recognize the only other republic besides ours, in order to do likewise. If the health of the European monarchies depends upon the death of the republics of America, then the security of the American republic must not be restrained by the others born at her side." Clay concluded his oration by saying: "*The only champion of democracy in these regions is the brave and chivalrous Artigas.*"

In his report to President Monroe, Commissioner Rodney sent extended and detailed information covering all the events which took place in the La Plata region since its discovery, including all documents obtained in Buenos Aires, the central point of the territory dominated by the enemies of Artigas, to whom the Argentine historians referred as the bandit, captain of smugglers, highwayman, blood-thirsty bandit, and other similar not endearing terms. The Rodney report ends with this statement: "It is fair to add, nevertheless, that General Artigas is considered by persons worthy of belief, to be a consistent supporter of the independence of his country. A decisive opinion on such a delicate question could be hardly expected from me inasmuch as my position does not permit me full view of the condition of the territory as a whole. I have not yet had the satisfaction of a formal interview with General Artigas, who is *unquestionably a man possessing singular and ex-*

ceptional talents. But were I to dare conjecture, I do not believe it impossible that in this as well as in the majority of local disputes there is fault on both sides. It is to be lamented that they are in open hostility." Commissioner Graham said: "General Artigas and his followers claim that the intervention of the Buenos Aires government is to dominate them and to compel them to submit to conditions which will rob them of the privileges of self-government which they believe they are entitled to demand. They state that they are desirous of joining the people of the western bank of the river, *but not in such a way as to be left subject to the tyranny of Buenos Aires.* This war has had as its origin a combination of causes, wherein perhaps both factions have something to complain of and something for which to repent. Mutual interests demand their union, but much discretion and moderation are needed to secure it; in fact, a great deal more than what can at this moment be expected from the irritated spirit of some of the leading personages of both sides."

At the same time that the American envoys were writing these reports, Puyrredón wrote to San Martín as follows: "Artigas has been completely routed by the Portuguese and compelled to seek shelter in the forests with very few of his bandits." San Martín had sent two messengers from Chile with instructions to go to the Artigas camp for conciliation, but this move was unfavorably received by Puyrredón, who reproached San Martín for having interfered, and ordered the messengers to return from Mendoza without interviewing Artigas.

The report of the third commissioner, Mr. Bland, says: "Artigas put the plans of the Buenos Aires government to the test, *demanding that the Banda Oriental be considered and treated as a state. This demand was considered at Buenos Aires as the most irrational criminal offense and defiant rebellion against the only lawful government of the United Provinces, which government, according to its doctrine, embraced all of the viceroyship of which Buenos*

Aires had always been and by right was then and should continue to be the capital whence all authority should emanate. Artigas opposed and denounced this as a manifestation of an unjust and arbitrary spirit of domination on the part of Buenos Aires, and to which he could not in any manner submit. Artigas, though driven first in one direction and then in another, attacked by the Portuguese on one side and by the patriots of Buenos Aires on the other, and on guard against an unexpected attack by the Spaniards, has the entire population in a state of submission to the power of his will. *It may be said that Artigas and his gauchos valiantly defend their homes, their country, and their rights, and that the King of Portugal plans to enlarge his domains by adding the province to Brazil.*" In speaking of the peasants of the province Oriental, Bland says: "*They are the most formidable guerillas that have ever lived.*" They rank second to none in physical prowess, and the deeds of valor ascribed to them by far surpass those of the Parthes, the Escitas, and the Cossacks of the Don.

"Revolutionary America had in the culmination of its justifiable revolution, and from the very beginning, one true adherent and armed supporter, Artigas. Yet all is not known, except by the people who guard within their soul the glory of that tradition, for it happens that some of the most interesting and appealing facts about the La Plata revolution have not either been written or propagated. This came to me as I read the excellent résumé, written in such clear and precise style, which the illustrious noble, Rufino Blanco Fombona, presented at the Madrid conferences, regarding the origin of contemporary America."

"It is locally admitted that the revolution of the extreme south originated and was maintained in a monarchical atmosphere, which appears to be relatively true, as no mention is made of Artigas, instigator of democracy, harassed and pursued like a beast of the jungle, by the monarchical oligarchy of the Posadas and the Puyrredóns, and then slandered in transient history by writers inheriting the

hatred of monarchical politics. A fundamental revision of comparative worth is a new task on the history of this region of the south, and when this revision has been completed and certain ghastly and mediocre figures have passed to a secondary plane, one figure will continue to grow to gigantic proportions as a figure worthy of America, the chieftain with lionlike grasp who in 1813 hoisted the flag of integral organization and clearly defined republicanism—which Bolívar also took up soon after, though in a less fervent form, in opposition to the monarchical program of San Martín." (From José Enrique Rodó, in *Motivos de Proteo*.)

Ignorance regarding the true history of the La Plata, and ignorance as to the true part played by Artigas, are the two main reasons for the many errors which we find in books of American history. In a book recently published in the City of New York (Appleton, 1918), and written by Don Enrique Santibáñez, former instructor of universal history in the preparatory school in the City of Mexico, we read in substance the following: "Artigas represented in that chaos the chieftain whom we very frequently find in Latin America, who does not recede from any act of brigandage or false report, provided he can dominate his unfortunate country." This Mexican historian honestly believes that Artigas was another Pancho Villa. He is a new grave-digger for the Oriental hero who, to quote Mitre, the Argentine historian, "Has been buried definitively." "We two," wrote Mitre to López (another Argentine historian), after a dispute, "have shown the same predilection for the great men and the same repulsion for the disorganized barbarians, like Artigas, *whom we have buried historically*."

But the historically dead one returns to life, and an aureole of glory, which no other Platenese caudillo (chieftain) or hero possesses, now crowns his head, for the reason that he was the only democrat of his time in the La Plata region, and the only one who did not doubt the ultimate triumph of the republic.

THE ORIENTALES TAKE UP ARMS AGAINST BRAZIL

The Banda Oriental was annexed to Brazil, under the title of Provincia Cisplatina, thus forming part of the kingdom of Portugal. Soon after, on the 21st of September, 1822, Brazil declared its independence from Portugal, with the usual result—a conflict between the two nations, the Brazilians being compelled, under their leader, Lecor, to withdraw from Montevideo to Canelones.

Invasion of Thirty-
three—1825—
April 19

The Oriental Knights, members of a patriotic society, sent a commission to Buenos Aires to propose the incorporation of a Banda Oriental with the United Provinces, and so presented themselves before the cabinet minister, Rivadavia. The latter remonstrated, stating that he could not accept the proposal until presented by a regularly constituted government. This provoked Lavalleja, future leader of the famous Thirty-three, to revolt. But on being pursued, and not having any resources at his command, he was unable to offer resistance, and therefore migrated into Argentina.

On the 20th of October following, the Cabildo of Montevideo decided to enact the law exacted by the Buenos Aires government, and so the neighbor communities in meeting assembled unanimously declared: "That the province as a whole, and particularly the capital, placed itself freely and of its own free will under the protection of the Buenos Aires government, that they considered the act of incorporation with the Portuguese monarchy null, criminal, and arbitrary—the act having been sanctioned by the Congress of 1821, composed largely of employees under the pay of the Portuguese King, and that the province of Oriental of Uruguay did not belong, and should never belong, to any other power, state, or nation than that of Rio de la Plata, of which it had been and still was a part."

Three days after the issuance of the above declaration, the Portuguese General, in compliance with instructions

received from Lisbon, abandoned the town to Lecor, and he himself set sail for Portugal.

The patriots Lavalleja, Manuel Oribe, Zufriategui, and others got together and jointly entered a binding agreement to invade the province of Oriental, and accordingly invaded the territory on April 19, 1825, on the Agraciada coast. These venturesome heroes were thirty-three in number. They swore on their knees before the flag to liberate their native land or die in the attempt. The motto inscribed on the banner of liberty, which Lavalleja caused to wave, read: "Liberty or Death."

The group of patriots under this banner was augmented by the forces of Rivera and others, and on the seventh of May laid siege to the city of Montevideo. On the 20th of August the National Assembly convened at Florida and named Lavalleja Captain General. On the 25th of August the said assembly declared the independence of the Provincia Oriental and its incorporation with the Argentine provinces, and so advised the government of Buenos Aires.

On the 20th of the following September, the Orientales, under Rivera, defeated the Brazilian forces at Rincón de las Gallinas. General Lavalleja routed another Brazilian army at the battle of Sarandí, under the cry, "Shoulder Carbine, Sabre in Hand," which triumph was enthusiastically celebrated in Buenos Aires.

The Argentine Congress declared the incorporation of the Provincia Oriental with the United Provinces, and demanded its release from the governmental authorities of Rio de Janeiro. This brought about Brazil's declaration of war, which the Argentine government answered by the intervention of its army in crossing the Uruguay, thence marching north and encamping on the plains of Ytuzaingó. The combined forces of Argentinos and Orientales consisted of 7,000 men, against 9,000 Brazilians, including 3,600 Austrians sent by the Emperor of Austria as a nucleus for the Brazilians' forces, to his political associate, the Emperor

of Brazil, the Austrian General, Bauer. There were many Austrian officers, members of the Brazilian Staff.

The republican forces were rewarded with victory, and in due time a treaty of peace was signed, wherein England took part by guaranteeing the complete independence of the Provincia Oriental on the 27th of August, 1828. The Uruguayan Constitution was sworn to on the 18th of July, 1830, and recently amended on March 1, 1919.

THE WAR AGAINST THE DESPOT ROSAS

General Rivera, who was elected the first President, served four years, and President Oribe, elected to succeed him, did not serve out his term, which was interrupted by a revolution, and Oribe obliged to resign the presidency. Rivera, who again occupied the presidential chair, declared war in 1839 against the despot Rosas of Buenos Aires.

The New Troy

Oribe, on giving up the presidency, placed himself at the disposal of the tyrant, who was then ruling as an absolute king. Oribe, becoming Rosas' sword, relentlessly persecuted the Unitarians, enemies of the latter. After defeating all of Rosas's enemies, Oribe, who was an able general, came to Montevideo with a powerful army of 14,000 men, besieging the city on the 16th of February, 1843. The siege lasted for nine years, and gained for the city the title of "Nueva Troya." During this prolonged siege, the partisans of the despot Rosas dominated the whole of the Oriental campaign. Montevideo was the retreat of the most illustrious Argentine enemies of Rosas, the "Unitarios" (Unitarians), among them Mitre, Paz, Florencio Varela, and a good many Europeans, like Garibaldi, who was at the head of the Italian legion.

Rosas was the most cruel tyrant that ever ruled in America. He established a despotic form of government, over which he ruled for twenty years, during which time he mercilessly persecuted his enemies and confiscated their property. He leaned upon and catered to the lowest element,

and his audacity reached such a stage that he had his photograph placed on the altar of a church in place of one of the images. He was inimical to all forms of civilization and oppressed all foreigners. The laws were proclaimed under the caption: "Death to the unclean, loathsome, and savage Unitarios, enemies of God and Man. Long live the Restorer of the law." His adherents were the most dreaded assassins. "La Mazorca," organized by Rosas, was an organization of bandits, associated for the purpose of whipping and murdering all Unitarios without any process of law.

It was this despotic cruelty that drove the Unitarios and their families into Montevideo and Chile. Two thousand two hundred Argentinos were murdered during this reign of terror and tyranny. His outrages against the French caused the French fleet to blockade the port of Buenos Aires, and it was then that he added to his title, that of "Restaurador de las leyes," the one of "Defensor de la Independencia Americana" (Defender of American Independence), when instead he should have acquired the title of "Defensor de la barbarie pampeana" (Defender of pampean cruelty).

THE TRIPLE ALLIANCE AGAINST ROSAS

It appears almost incredible to-day to read of the atrocities committed by Rosas, but nevertheless it remains a fact. He was a bloodthirsty emulator of Neron. "Amalia," by the well-known author José Mármol, gives a very good idea of who Rosas was and what took place under his dominion. Rosas claimed to be a federalist, but had no conception of what a federal government should be, as his government was as absolute as the most exaggerated form that could be found in any country in the world. All of Argentina was a gathering of savage gauchos, who controlled in their territory in the various provinces, also as absolute owners of the land.

In December, 1850, the defensive government of Montevideo celebrated a treaty of offensive-defensive alliance with Brazil and the Argentine provinces of Entre Ríos and Cor-

rientes, against Rosas. The Argentine General, Urquiza, crossed the Uruguay with his troops to attack Oribe, and thus deprive Rosas of the former's support. The Brazilians also entered Oriental territory. Oribe was soon after abandoned by his best leaders, and nearly all of his army, composed mostly of Argentinos, joined Urquiza's troops, and Oribe was compelled to capitulate on October 3, 1851, thereby terminating the siege of Montevideo, which had lasted for a period of eight years, seven months, and twenty-two days.

The allied forces, numbering 30,000, invaded the province of Buenos Aires, finally accomplishing the overthrow of Rosas on the third day of February, 1852. He sailed in an English vessel to England, where he died several years later. Thus was fulfilled the prophecy of Mármol, the poet who said: "Ni el polvo de tus huesos América tendrá" (Not even the dust of your bones will America retain).

WAR AGAINST LOPEZ, THE TYRANT OF PARAGUAY

Another tyrannical government had been implanted in Paraguay by the dictator Francia and the members of the López family, his successors, making it necessary for the Argentinos, Orientales and Brasileiros to organize a triple alliance to demolish it (treaty of May 1, 1865). No more bloody war has been fought on American soil than that between the López forces and those of the nations allied against him. The conflict lasted five years. Paraguay was ruined and its man power almost completely annihilated defending a tyrant ruler, not defending the land, as the allies did not intend to acquire territory by conquest, seeking only to rid the republics of America of a despotic government which was a constant menace to their comfort.

Paraguay was then the first military power in South America, and her position would have entitled her to the sobriquet of "The Germany of America." Her ruler, López, had ideas in common with the would-be world-conqueror ex-Kaiser, leading his people to believe that he was fighting for

the liberty of the country which he ruled as a tyrant, just as the Kaiser succeeded in making his subjects believe that the allied nations had provoked the war as a pretext to deprive them of their commerce and rob them of their wealth. These two absolute monarchs differed, in that López died fighting the enemy, while Wilhelm II, after careful planning and watching for the opportunity that finally came, succeeded in making his flight to neutral territory though he yet had a powerful army and navy at his command.

"Paraguay lost over 500,000 men in this war, of whom 160,000 died in the field of battle, 40,000 among those executed and tortured to death, 200,000 victims of cholera epidemic, etc., and lastly, a vast number died of hunger." (Geography of Paraguay, by Hector F. Decoud, Asunción, 1896.)

The citizens of Paraguay have familiarized themselves with the depraved record of López, as is proven by the earnest protest recently made at Asunción when some one planned to honor the memory of the tyrant López. His case should be treated in like manner as that of the Kaiser, who is being cursed by his former countrymen as having been the instigator of the most terrible catastrophe ever recorded in history, for Paraguay's position in American politics at that time was identical to that of Germany in European politics until destroyed by the recent war which proved the Kaiser's undoing, under which government the people as a whole were further advanced in a general way but politically the least competent—the government of Germany having been conducted as were those of mediæval times. The political education of the people is worth far more than all German "Kultur" methods such as make her unfit for real self-government, due to the fact that her subjects have been brought up to obey and given no opportunity to practice any form of free government.

The Oriental Republic in 1885 exempted Paraguay from payment of the war debt and returned to the latter all the trophies of war which the Orientales had captured during the conflict, with the statement that the war had not been

waged against the noble Paraguayans but against the despot López.

THE CAUSES WHICH LED TO THE INDEPENDENCE OF SOUTH AMERICA FROM SPAIN

In the chapter wherein Professor Shepherd explains the causes which led to the Independence of Spanish America, he says: "Few movements in history have been so much misunderstood and few have displayed such a complexity of purposes and methods, and none has presented a stranger outcome as the series of revolutions which from 1810 to 1826 destroyed the power of Spain in America." The struggle is best explained by regarding it from a threefold point of view: Spanish, Spanish-American and European. "In the first place," says Shepherd, "it was a fight between Spaniards of the New World and a conservative government of the Old World." We would say more fittingly that it was a struggle between the old spirit of Spain anterior to Carlos V and the absolute ideas of domination of the latter, which destroyed Spanish liberty. In Spain, Padilla and the Comuneros revolted against the absolute power of Carlos V (who ruled according to the German way) and were defeated, but the triumph of the absolute monarchy proved disastrous for Spain, as America could not become the victim of tyrannical government, without protesting, which was done by the War of the Comuneros of Paraguay in 1723, who in their proclamation resolved: "*That the authority of the people was superior to even that of the king.*" This revolution was suppressed and its leader executed after he resigned his command, but there remained within the breast of each Paraguayan and Platense a concealed animosity towards the tyranny of Spain. Shepherd credits the Indians as being neutral or inclined to favor the government of the metropolis; this may be true of the Indians and Mestizos of Peru and other Andean districts, trained in the school of despotism or absolute government of the Incas. These Indians did not detect any difference between their old form of

government and that administered by Spain. Indian theocracy did not recognize citizenship, and had it not been that the Spaniards forced the Indians to work, these would have perhaps preferred the Spanish form of government. But such was not the case with the pampean Indian of the La Plata, the Charrúa of Uruguay, the Araucano of Chile, and the Guaraní of the Paraguay and of the Bolivian plains, who were never subdued, who always maintained their independence and were the first to assist in the expulsion of the Spaniards, and also contributed the larger number of defenders to the cause of independence, many of the city residents remaining neutral, preferring a tranquil existence, whether as subjects of Spain or of any other dominion.

Other factors which Shepherd and many other historians believe had an influence on the independence of the South American colonies were the ideas evoked in connection with the American and French revolutions, as well as those advanced by the philosophers Montesquieu, Rousseau and Voltaire, neither of which was known but slightly in South America. Books and printed matter were not at that time world-known, and besides, the great majority of South Americans, particularly the residents of the champaign, who took an active part in the revolutions, the real patriots, were unable to read. It was not ideas, it was not what the philosophers said that aroused those patriots, but it was the spirit of freedom in the Indian and the Creole before Spain's time, during the rule of Spain and after the victory over Spain. It is that same spirit that causes them to revolt and take up arms against the seat of government when it no longer respects their rights. These are *the horrible revolutions which so alarm the Europeans when contrasting the South American revolutionists with the meek and tolerant people of some of the countries of Europe, among them the Germans, Austrians, etc., who will stand for the most tyrannical or despotic form of government.*

The moment for which the South Americans had so longingly waited to accomplish their desires came when Napo-

leon invaded Spain, as we hereinbefore stated. We must insist that the independence was not brought about by the dreamers and thinkers, but by the plainmen, men of action—the gauchos of the La Plata, the 'llaneros (plainmen) of Venezuela, and Nueva Granada (now Colombia), Bolívar and Artigas, the "Caudillos," who embody the souls of peoples, and San Martín, Sucre and Córdoba, the generals who win the battles for freedom.

COLONIAL AUTHORITIES¹

SUMMARY

Indian Council—Board of Traffic and Commerce—The Royal Audience—Consulates—The Viceroy—The Governors—The Cabildos—Town Mayors—Spanish Municipal Laws—Padilla and the Comuneros.

INDIAN COUNCIL

The discovery and settlement of America, which placed such vast domains under the authority of the King of Spain, had an immediate influence on the public administration of the Metropolis whereby the opportunity came to create new special authorities entrusted exclusively with American affairs.

The judicial concept on Spanish domination of America, decreed complete separation of its affairs and those of the Metropolis, the only tie binding America to Spain being the authority of the Sovereign who governed Spain under the mandate of a public law which insured the people a certain participation in public matters, particularly as to the levying of taxes voted upon by the Cortes (Senate and Congress of Deputies in Spain). *America became the exclusive property of the Sovereign* with all rights vested in him and combining the Executive, Legislative and Judicial powers, with authority thereby to tax and alienate the property if he so desired.

Consequently, America did not form a governmental part of Spain, it being only and exclusively the property or

¹From the "Historical Manual of the Oriental Republic of Uruguay," by Santiago Bollo, Libreria Nacional, Montevideo.

dominion of the Sovereign. We will see further on how at the beginning of the struggle for the independence of South America that this judicial concept of sovereignty was to be the legal doctrine to be invoked for its severance from the Metropolis.

The supreme authority on whom rested all matters relative to America consisted of an Advisory Board which bore the title "Consejo Real de Indias" (Royal Indian Council) which body was appointed as were all other supreme colonial authorities, directly by the Crown.

One of the functions of the Council was the drafting of Ordinances and Laws pertaining to civil as well as economical and religious matters which it presented for final approbation to the King who on finding them to his liking would publish them and order their enforcement. The Council also attended to the revision of all plans by the viceroys who, on the Council's mandate, would submit them to the King.

BOARD OF COMMERCE

The Board of Commerce established at Sevilla, about the year 1605, was also a collegiate body composed of President, Treasurer, Accountant, three Advocate Judges and Prosecutor. The functions of this Board were to attend to all matters relative to commerce and navigation in connection with America, to directly supervise the dispatching and registering of all vessels destined to take care of the Indian trade, and to exercise civil and criminal jurisdiction on all cases arising therefrom.

THE ROYAL AUDIENCE

The Royal Audience had judicial supervision within the territory to which it was assigned and had the authority as a second and third higher tribunal to hear civil and criminal cases originating before the lower courts, and having besides, the right to pass on the appointments of those magistrates.

The members of these Audiencias were appointed by the King with whom this assembly communicated directly and which privilege contributed largely to earning for it the high consideration in which it was held.

CONSULATES

The Indian Consulates, established since 1543, composed an institution adapted to the commerce of America and attended to the settlement of all disagreements between the carriers.

The election of the Consuls was conducted by two graded bodies, or in other words, the carriers in a body selected thirty of their number who, in turn, elected the Consuls.

THE VICEROYS

The executive power in the territory of the colonies rested on the Viceroy, who, as the name indicates, were the direct representatives or delegates of the Crown and vesting in themselves such political powers as the Sovereign had not already delegated to some one else.

The vast American domains had during the colonial period, only four viceroyships, namely: Mexico, Nueva Granada, Peru and Rio de la Plata, organized according to the latter, in the year 1776.

As the Crown's representatives, the Viceroy had supreme jurisdiction over all matters and under no other appellate authority than the King himself. They had the right to modify judicial deliberations, and, in fact, provide themselves with the supreme authority of the King, without any other limitation than what was expressly prohibited.

The Viceroy had under their immediate jurisdiction several Governors, each viceroyship being divided into gubernatorial districts which, in some cases, embraced large territorial areas. The Viceroy was also Commander-in-chief of land and sea forces with supreme military authority and the privilege to appoint and discharge the commanding officers of the land forces,

Such responsibility attached to the office of Viceroy to which supposedly highly respectable men of the Metropolis were appointed, that they were prohibited from coming to America in company with their wives and sons and the wives of the latter.

GOVERNORS

Each Governor and Intendant comprised the Executive Department in their respective gubernatorial district into which the viceroyship was divided. They were, as a rule, appointed by the Viceroy, but these appointments were temporary, as the appointment only became effective after confirmation by the King. Some of these appointments were not confirmed at times and therefore the provisional Governor would retire in favor of the King's appointee.

As a necessary qualification, the prospective Governor had to be a native born citizen of Spain and he should bind himself not to contract marriage in the territory where he was to assume authority.

The general functions of the Governors were the same as those of the Viceroys within their respective jurisdiction, excepting that the latter were superior in authority. Whenever a vacancy occurred, whether through death or for any other reason, or the appointee failed to take up the duties of his office at the time, the Royal Audience would take charge until the appointment of a successor or until the original appointee was ready to exercise the duties of his office.

CABILDOS (TOWN ASSEMBLIES)

The only authority that did not emanate directly from the Metropolis amidst the various regulations which completely absorbed the rights and privileges of the native born American, was the institution called Cabildo or Ayuntamiento (Town Assembly) whose members were elected from among Spaniards or Americans without distinction,

only that the candidate be a resident of the town and a man of sound moral character. Theoretically, the Cabildo was the genuine representative body of the people, an adulterated imitation of the ancient Comunas of the Metropolis which shared in the carrying out of public questions through the deputies sent from the towns by the efforts of the Comunas, to the General Congress.

We have stated that this institution represented the people only theoretically, for although the election of its members was originally by popular acclaim, besides holding elections to name a successor to fill each vacancy occurring, the truth was that the sovereign reserved unto himself the right to name a few of its members who were none other than the five appointed for life, who naturally had more prestige than those who were elected annually, not alone for the reason of their owning the position but also in recognition of the origin of their authority as the representatives of the interests of the Sovereign.

The municipal power of Spain had suffered the first of the illegal attacks of the throne, and at the time to which we refer it had been deprived of its attributes and independence. It existed only as a ridiculous image of what it once had been. National sovereignty was originally concentrated in the municipal power. It was the legitimate organ of expression of each community's social interests, but the fusion of the divers monarchies and lordships into which the peninsula was divided, together with the plan of centralization evolved by Fernando the Catholic and consummated by Carlos V accomplished the ruin of that municipal power. By the time of the conquest there remained not a trace of this power in the Cabildos. Subsequent Indian legislation reduced these institutions to an absolute nonentity and reversed the order of their functions *by completely surrendering them to the despotic and arbitrary government of the Metropolis.*

Carlos V, King of Spain and Emperor of Germany, was not a Spaniard. He was German on his father's side and

by education, and was not even familiar with the Spanish language at the time of his occupation of the throne. He surrounded himself from the very beginning of his reign with a German Court and a government conducted à la Germanica, in no different manner than was the recently deposed German Kaiser, the instigator of the war that has destroyed Europe. Carlos V died insane while confined in a convent, and the Carlos V of the present day, as a criminal also, will in time be called to justice.

Were the Spaniards to familiarize themselves with the history of Carlos V, there would be no German sympathizers among them, inasmuch as it was the Germanic system that brought about the ruination of Spain and Spanish liberty.

Whenever the Cabildo sat in private session it was denominated Cabildo Cerrado (Reserved Assembly), but when the public was admitted to its deliberations it was called Cabildo Abierto (Open Assembly). The latter would convene either on petition by the people or of its own volition, the conduct of its deliberations being similar to that of assemblies of the old democracies.

CORREGIDORES (TOWN MAGISTRATES)

The corregidores were the exclusive functionaries of those districts where the indigenes under subjection were congregated, their duties being to impart justice in cases where Indians and Spaniards were in dispute, to represent the former in all such cases and more specially to train them in all the industries, strictly prohibiting them from keeping any of the profit from their own work. These officials were also appointed by the Crown.

SPANISH MUNICIPAL RIGHTS

In Spain as well as in America at a later period, munic-

ipal power was vested in the Cabildos whose members were the direct representatives of the people and the medium through whom the necessary arrangements were made in the selection of Deputies to be sent to the Cortes who in turn, as we have learned, drafted legislation on matters relative to taxation and were also responsible for the security of the fundamental laws of the nation, should these at any time be in danger of being absorbed by the power of the Sovereign.

The elections of Deputies to the Cortes were conducted at the Town Hall or Cabildo headquarters under the chairmanship of the Cabildo. The powers with which they were invested clearly specified the wishes of the civic bodies they represented, leaving it to the people to be the judges with the privilege to pass on the use or misuse that the Deputies would make of these powers. Thus, the Cabildos were primarily the bodies entrusted to guard the rights and privileges of the civic communities as well as to take the lead should the people revolt at any time against the violation of their prerogative. Such was the action taken in 1520 when on the occasion of Carlos V leaving Spanish territory to go to Germany, the Cortes met in session at Santiago de Galicia to confer on a subsidy which was asked by the King to pay for the expenses of his trip.

Therefore, taking advantage of the opportunity afforded by the Cortes, the majority of the Spanish cities sent their Deputies with explicit instructions demanding that the King stay within the confines of the nation, or in case he should absent himself therefrom, to leave part of the national territory in the hands of the various cities and not to centralize it in one foreign regent, thereby violating monarchical laws.

PADILLA AND THE COMUNEROS

These Deputies had express orders not to take part in the voting on the question of subsidy until action had been

Padilla and the
Comuneros (Mem-
bers of Party
opposing the en-
croachments of
King Carlos V)

taken by the King on the various petitions made through them by their respective cities. But instead, the Deputies went before the Cortes, tied hand and foot, voting for all measures that the King through his minister demanded of them. This disloyal action was the signal for a general insurrection by the cities represented, and their taking up of arms in defense of their trodden rights. The first one to give the signal was Toledo, supported by two of the members of his Cabildo, Don Juan de Padilla and Don Fernando Dávales. This revolution was suppressed by force of arms and the leaders executed. This also sounded the death knell to Spanish liberty under the despotic reign of Emperor Carlos V and that of his successors. This same Carlos V, a native of Gante, was the one who in reply to a lawful petition from his fellow-citizens in support of their rights, had them executed as a warning to all who dared complain.

CHAPTER II

HISTORICAL INFORMATION ABOUT THE CENTRAL ANDEAN REGION—PERU AND BOLIVIA

SUMMARY

Conquest of Peru—Empire of the Incas—Upper Peru from 1810 to 1812—Spanish
Invasions into Argentina—Argentine Invasions into Upper Peru—San Martín Crosses the
Andes—Bolívar and San Martín—The Guayaquil Conference.

THE CONQUEST OF PERU

The conquest of the Andean region first began in 1524 by the famous conquerors Francisco Pizarro and Diego de Almagro, who started from Panama and, traveling along the Pacific coast, penetrated as far south as Peru. The two sons of Huaina Capac—Huascar and Atahualpa—were at war against each other at the time of the arrival of the Spaniards. Huascar solicited Pizarro's assistance against his brother Atahualpa, who did likewise when in 1532 he went before Pizarro in great pomp and splendor. This was the opportune moment of which Pizarro took advantage to treacherously imprison Atahualpa, who was tried for imaginary crimes and executed. One of Atahualpa's sons was proclaimed Inca, but his reign was of short duration, as he died soon after having assumed power.

Pizarro returned to Spain and obtained the confirmation of his authority, Almagro being designated for the conquest of the lands to the South. Pizarro founded the City of Lima on the site which to him seemed the most proper for the exchange of communications with Spain. In the meantime, Almagro proceeded in a southerly direction and explored Chile, but failed to find any gold, which was his main object, and also that of Pizarro. Almagro's troops had been reduced considerably in numbers in crossing the

desert of Atacama and later in crossing the mountains, Almagro returning to Peru very much disappointed and disillusioned. Valdivia was finally the conqueror of Chile.

The Peruanos rose up in rebellion and attacked the Almagro troops, who routed the former and took the city of Cuzco, which Almagro claimed as his own. The civil strife between the Spanish factions started, culminating in the defeat of Almagro, who was made prisoner and decapitated. Pizarro was soon after assassinated by Almagro's adherents.

Gonzalo Pizarro next assumed authority and revolted against Spain, which action was later indorsed by Carbajal, who burned the royal banner to the ground and hoisted one which he himself designed. Both Pizarro and Carbajal died in battle against the royal army, which had been organized by Pedro de Gasca, sent from Spain to assume control of the government of Peru.

In looking back into the remote past to the first Peruvian Empire, founded 3,000 years before the beginning of the Christian era, we find little to establish its identity, but such is not the case with the empire founded in the year 1100 A. D., by Manco Capac, which dynasty numbered thirteen emperors, ending with the rule of Tupac Amarú, who was beheaded by the Spaniards in 1571. The empire was named *Tauantinsuyu*, which in the Quichua language means "The Four Regions." The god of these agriculturists was the Sun, whose rays ripen the earth's products and give life to creation throughout. The lands were divided into three equal portions: one for the Inca Emperor, another for the Sun and priests, and a third for the people. Each married man received a parcel of land, which increased with each new son born to the family. The lands were again divided after the harvesting of the crops. Farming was done in common, first cultivating the lands of the Sun, then those of the soldiers, and lastly those of the individual families. The Great Spirit, supporter of their religion, was known as *Pachacamac*, whose symbol was the Sun. The

inhabitants were familiar with astronomy, and the seasons of the year had special recognition; Spring and Summer, when nature appears the brightest, was the "Season of Creative Heat," while Autumn and Winter represented the "Season of the Darkened Side."

They were also familiar with the twelve signs of the zodiac, and the Milky Way was to them a belt of luminous matter. Their chronological records dated back 3,000 years before the present era began. They used to celebrate festivities in honor of the Sun when the rays of this heavenly body attained their verticality at the Tropic of Capricorn. Instead of penmanship they used "Quipus," which consisted of strings of various colors, which with the aid of knots tied in divers ways, enabled them to record a variety of events. Their architecture was of a massive style like that of the Egyptians, and their buildings more substantial than those of the Romans, as attested by the ruins of their temples, the Cuzco Palace, and several other works of construction.

ALTO (UPPER) PERU FROM 1810 TO 1812

We will take a passing glance at the regions of Alto Peru (Bolivia), where the general headquarters of the Spanish troops were situated, and which troops had instructions to advance upon and attack the patriotic army of Argentina.

The Army of the North under the command of Balcarce, entered Bolivia on the 27th of October, 1810, attacked Cota-gaita, and was defeated. A second attack was successfully carried out, this time at Suipacha, ending with the capture of Cotagaita. The attacking army proceeded north and on meeting defeat at Huaqui was compelled to retreat to Argentine territory.

After the defeat at Huaqui, the Army of the North, under instructions from Belgrano, initiated its campaign and was victorious at the battle of Piedras River on the 2d of September, 1812, and soon after routed the enemy at Tucuman,

pursuing the Spanish army to Salta, where they were obliged to capitulate.

Belgrano penetrated Upper Peru, which was in revolt against Spain, went to Potosí, and on his march northwardly he was attacked by Viceroy Pezuela, his forces being first defeated at Vilcapugio in October, 1813, and later at Ayouma on the 14th of November following. The Argentine troops had again failed in their mission, and returned to Argentine territory a second time.

These fruitless attempts convinced the army of patriots that this was not the proper route for them to carry on a successful campaign against Spanish power, and considered the plan of maritime connections to reach Lima, the capital of Peru and center of all resources used by Spain. This was the idea conceived by General San Martín, who was more capable and better prepared than Belgrano to take charge of the campaign. The Army of the North under Rondeau again ventured into Upper Peru, a third time reached Potosí, and though favored in a way that it had not been formerly, was completely routed at Sipe Sipe and forced to retreat.

SPANISH INVASION OF NORTHERN ARGENTINA CHECKED BY THE GAUCHOS OF GÜEMES

After the battle of Sipe Sipe, the Spaniards invaded Salta and Jujuy in 1816, but were checked by the brave gauchos of Güemes, fearless soldiers and expert riders, such as the Orientales of Artigas and Rivera, who had battled against veteran Spanish troops. The courage displayed by the gauchos was such that they would venture near enough to throw their lasso around the soldiers on guard duty and drag them away as prisoners. The gauchos finally drove the Spaniards out by their continued surprise attacks, though without the implements so necessary in battle.

THE ARMY OF ARGENTINA CROSSES THE ANDES TO CHILE

San Martín was at Cuyo organizing the army which was

to cross the Andes for the purpose of attacking the Spaniards in Chile and thence go by water to Peru. On completing the preparations for his Chilean campaign, with his Army of the Andes in two divisions of 4,000 soldiers and 1,200 recruits, San Martín left the encampment at Mendoza and began his journey across the Andes through the passes of Uspallata and Los Patos, encamping in the valley of Aconcagua in Chile. In their first encounter, which took place at Chacabuco, the Spaniards were routed and almost the entire army captured. San Martín next entered Santiago, the capital of Chile, which Junta de Notables (Council of Notables) elected him Supreme Director of Chile, but San Martín did not accept the honor and therefore the title was bestowed upon General O'Higgins.

The Spaniards, through a surprise attack in the valley of Cancha Rayada on the 19th of March, 1818, caused the Argentine army to scatter, but it was promptly brought together by San Martín, who led it to victory in the battle of the valley of Maipo on the 5th of April, 1818. This glorious victory opened the road to Peru.

On the 20th of August, 1820, San Martín, at the head of 4,430 Argentinos and Chilenos, set sail from the port of Valparaiso with the Chilean fleet under the celebrated Admiral Lord Cochrane, disembarking on the coast of Peru on September the 8th.

BOLÍVAR AND SAN MARTÍN—CONFERENCE AT GUAYAQUIL

The Spaniards scattered throughout Peru and the Argentine frontier numbered 20,000.

The army commanded by San Martín had its first triumph against the Spaniards at Cerro de Pasco, going from there to Lima the capital of the Viceroyship of Peru, thence to Callao, a strongly fortified port, both of which had been recently abandoned by the Spanish forces.

During the same period, another illustrious patriot, General Bolívar, "Libertador del Norte" (Liberator from the North) had after hard-fought battles reached Guayaquil,

having first liberated Venezuela, Colombia and Quito. On being invited to a conference in Guayaquil, San Martín met the other liberator to consult upon a plan for the conduct of the Peruvian campaign. Bolívar expressed his desire to continue his campaign through Peru, and so San Martín realized that the only thing for him to do was to withdraw and make the sacrifice in behalf of the South-American cause in order that Bolívar could lead his army to Peru and thereby consummate its independence through the destruction of the only remaining center of Spanish power. San Martín arrived at Lima on the 20th of August and presented his sealed resignation to the Constituent Congress duly assembled, leaving soon after for Chile. On accepting his resignation, The Congress bestowed upon San Martín the title: "Fundador de la Libertad del Perú" (Founder of the Liberty of Peru) and "Capitán General de sus ejércitos" (Captain General of its Armies). Thus terminated the career of one of the greatest generals of the war for South-American independence.

CHAPTER III

HISTORICAL INFORMATION ABOUT THE NORTH ANDEAN REGION—VENEZUELA, COLOMBIA AND ECUADOR

SUMMARY

Independence of the North Andean Region—Miranda and Bolívar, Northern Heroes—The Liberating Armies of the North and the South Shake Hands in Peru—Sarmiento's and Rodo's Opinion of Bolívar.

MIRANDA AND BOLÍVAR—NORTHERN HEROES

We will now look into the important events which preceded the independence of the provinces of the Andes. We have already stated that one month before the Cry of Freedom by the Argentinos of Buenos Aires, in the month of May, the people of Caracas, in public meeting assembled, declared that "Venezuela in the exercise of its natural and political rights" would proceed to establish a government which would exercise its authority in the name and as the representative of Fernando VII. Bogotá did likewise, establishing another assembly on July 20th, and Chile's on September the 18th.

The Miranda revolution failed in 1812, when he capitulated at San Mateo. He was sent to Cádiz and imprisoned in the Carraca (the navy yard in Cádiz, Spain) with a ring placed around his neck like a common criminal, in which prison he died in 1816. Miranda's comrades, Bolívar and the other leaders migrated to Cartagena (New Granada, now Colombia), which was in the hands of the revolutionists. Bolívar, who initiated his campaign in 1813, after seven victories reached Caracas, his native land, a triumphant hero. In his manifesto of June 15 he stated the following: "*Spaniards and Canaries*—Reckon with Death,

notwithstanding your neutrality. *Americans*—Count on Life though guilty you might be.” This was in retaliation for the butcheries and atrocities committed by the Spaniards.

In 1813, after alternate victories and defeats, Bolívar started the organization of an Assembly. During the following year he was defeated at Lapuerta and Aragua by the bloodthirsty Boves, who also triumphed over Rivas and Bermudes at Maturin. Three thousand of the inhabitants of this latter town were put to the sword by Morales the barbarian. While these executions were taking place, Bolívar went before the government of Nueva Granada, where he was appointed Captain General. Little could he accomplish at this time, due to the civil war which was then going on, so he sailed for Jamaica, whence he was to return later to prepare for his third campaign into Venezuela.

At about this time (1815) the Spaniards received reinforcements, with the addition of 10,000 veteran troops under Morillo, which together with the Caracas reinforcements, formed an army of 16,000 well equipped men, 5,000 of whom marched against Cartagena, which was abandoned by its garrison after a siege which lasted 180 days. Six thousand people died of hunger and disease, besides 400 old men, women, and children who were beheaded under Morales’ orders.

In 1816, Bolívar returned for his third campaign, with resources furnished him by Petion of Santo Domingo. He met with reverses at the beginning and dispersed his troops under the command of his lieutenants Mariño, Piar and Paéz, and set sail for Haiti, due to discord in the ranks.

On being summoned again, Bolívar presented himself at Barcelona, Venezuela, in 1816. He failed in his first attempt to capture Caracas and asked the protection of his general “Black” Piar, who was the owner of the llanos of the Orinoco, and who advised Bolívar to start operations in the region of Guayana, to which Bolívar acceded. Piar next

defeated the Spaniards at San Felix, and shortly after, on being found guilty of conspiracy against Bolívar, was arrested and executed.

Bolívar, later reinforced by Paez, mustered an army of 4,000, which was subsequently annihilated by a surprise attack at Rincón de los Toros. Bolívar, then, with only forty men he was able to get together, marched into San Fernando. So ended the year 1819.

Bolívar's next reinforcements came with the addition of General Santander of Nueva Granada, who joined him at the foot of the Andes, completing an army of 2,500 men for the invasion of Nueva Granada, which was being defended by Viceroy Sámano with an army of 4,000 men. After many minor incidents, Bolívar routed the Spaniards at Boyacá, where he captured 1,600 prisoners along with their leader, Barreiro. Bolívar then fought his way triumphantly into Bogotá, and on the 8th of September issued a proclamation announcing the consummation of the union of Venezuela and Nueva Granada under the name of República de Colombia.

Bolívar proposed before the Congress of Angostura (Venezuela) the union of The Republic of Colombia with Venezuela, Nueva Granada, and Quito (now Ecuador), which proposal was enthusiastically and unanimously adopted. The confederacy covered 115,000 square leagues with a population of 8,000,000. Its banner was that of Miranda, hoisted by him in 1808. Bolívar was appointed Provisional President on the 17th of December, 1819, and military operations were immediately begun against Morillo, who had 12,000 men under him.

THE NORTHERN AND SOUTHERN ARMIES OF LIBERATION SHAKE HANDS IN PERU

It was at this historical moment, which turned out to be the most important of the revolution, that the Generals, San Martín in the South and Bolívar in the North, without previous notice or agreement, simultaneously started both

campaigns against Peru, which was then the principal Spanish fortification in America.

Bolívar started from Venezuela, by destroying the enemy forces numbering 5,000 men at Carabobo on the 24th of June, 1821. This triumph permitted him to enter Caracas a second time as the victor. It proved to be the decisive battle for the independence of Colombia.

The Congress of Cúcuta sanctioned the new constitution and elected Bolívar first President for a term of four years. He delegated his office to his Vice-President, Santander, and placed himself at the head of the troops assigned to liberate Ecuador.

On the completion of arrangements of a few unimportant details in Ecuador, Bolívar named General Sucre as the leader of the military campaign. The first few engagements proved disastrous to the American patriots. General Sucre was defeated at Huachi and was compelled to seek aid from San Martín, who sent General Arenales to the Quito frontier, thence to Guayaquil. Thus, 1,500 men of the Army of the South joined forces with the Army of the North during January, 1822, to combat Spanish rule.

Following the conference held in Guayaquil, Bolívar moved to Peru, and at the head of his army triumphed at the battle of Junin. On being defeated, the Viceroy La Serma decided to concentrate his forces at the Apurimac and there fight a decisive battle. He opened his offensive campaign in December. The opposing armies met on the pampas of Ayacucho, the Spanish under the command of the Viceroy, while General Sucre assumed command of the South American forces. General Córdoba, a young man twenty-five years of age, but of magnetic personality, raised his hat high in the air and imperatively commanded: "March on! Arms at will! Conquerors dash!" and with one accord, 3,000 Colombian bayonets advanced with such vigorous energy that they demolished everything in their way. The Viceroy, desirous of checking defeat, dashed amid his troops to encourage them, but was himself wounded and taken prisoner.

The Spanish army capitulated. Officers and men were taken prisoners and the liberty of Peru accomplished.

Alto Peru, to do honor to its liberator, changed its old historic name to that of "Republica de Bolivia" and the name of its capital to "Sucre" in honor of the victorious General of Ayacucho.

SARMIENTO'S AND RODO'S OPINION OF SAN MARTÍN
AND BOLÍVAR

Don Domingo Faustino Sarmiento, native of Argentina and one of the most brilliant intellects which South America has produced, said in criticising a biography of the Hero of the North: "In that biography, as in all the others that have been written about him, I have seen the European General, the Marshals of the Empire, a less colossal Napoleon, but I have failed to see the South American *caudillo* (the chief-tain) in a revolt by the masses of the people. I see a reproduction of Europe, but nothing that reveals America to me."

"Venezuela has plains, pastoral life, barbarian life, purely American—from these the Great Bolívar sprang forth."

"The manner in which the European and American writers have written the history of Bolívar, corresponds to San Martín and other military men like him. San Martín was not popular as a 'Caudillo,' he was truly and only a General. He had received his education in Europe and came to South America at the time his country was in a state of revolution, enabling him to organize the army at his ease under the European plan, and conducting the fighting in the regular way according to prescribed rules."

"San Martín's expedition into Chile was a methodically conducted conquest like that of Napoleon into Italy. But if San Martín had had to command 'guerrilleros,' and had been defeated at one point, then joined a group of 'llaneros' farther on, they would have hanged him on the second attempt."

"The world does not yet know Bolívar, the real Bolívar, and it is quite probable that when the true interpretation

of his higher psychological being is vividly explained, he may then appear even more extraordinary and great."

The celebrated Uruguayan writer José Enrique Rodó says of Bolívar:

"Great in thought, great in action, great upon being glorified, great upon being victimized by misfortune; great in exalting that which might be impure in the souls of the great, and great to endure in loneliness and in death, the tragic atonement of greatness. Many there are whose lives show a more perfect harmony, a finer moral or esthetic sense, but few that manifest such resolute character of greatness and of strength, and few that control with like fortitude the sympathetic feeling of heroic imagination."

"Bolívar, the revolutionist, the bushwhacker, the general, the leader of men, the tribune, the legislator, the president, all in one and all in his own style, represents an unparalleled originality which assumes and includes that of the land upon which he lived and of the means he had at his command. He did not fight like the European strategist, neither did he employ for his visions as a founder other than the divided elements furnished by institutions founded on universal experience and justice, and neither did he leave in the ensemble any image like anything that had gone before. That is why we dote upon him, that is why he controls us and why he will always remain as the hero par excellence, representative of eternal Spanish-American union. He—far better, for reason of his greatness and still more so for his eminence above the sectional leaders in whom semi-barbaric originality became individualized—personifies that which is characteristic and peculiar in our history. The clay of America, pierced by the breath of genius, transformed its flavor and its aroma into qualities of the spirit which exhaled in a vivid flame, an original and distinct heroic personality."

"The Alcibiades, the writer, the statesman of Caracas, was, whenever the occasion demanded it, the intrepid gaucho of the pampas of the North—el llanero (the Plainsman)."

SECOND PART

SOUTH AMERICA PRESENT

CHAPTER IV

OROGRAPHY AND GENERAL CONFIGURATION OF SOUTH AMERICA

SUMMARY

South America compared with other continents—Structure of both Americas—Description of the Andes—Mountain systems of Brazil—Has the Andean relief changed?—South American appearance during the tertiary epoch—The South American of the tertiary age—Change of living conditions on the Patagonian and Bolivian plateaus.

SOUTH AMERICA COMPARED WITH OTHER CONTINENTS

The continent of South America, like the continents of North America and Africa, is triangular in shape but smaller than either of these two, as the following figures show:

CONTINENTS	AREA IN SQ. KILOMETERS	POPULATION
	Millions	Millions
Asia.....	42	920
Africa.....	31	144
North America.....	26	133
South America.....	18	52
Europe.....	10	450
Australia.....	8	5

South America ranks fourth in size, is two-thirds as large as North America and as large as Europe and Australia combined.

STRUCTURE OF BOTH AMERICAS

The structure of South America resembles that of North America. On the west, the high range of mountains called the Andes corresponds to the Rocky Mountain Range of the latter, though the former range has higher peaks, and plateaus of from 3,000 to 4,000 meters elevation. On the

east, the range of mountains along the coast of Brazil, which vary from 1,000 to 2,000 meters above sea-level, corresponds to the Allegheny Range of the North American continent. (Figure No. 1.)

DESCRIPTION OF THE ANDES

The Andean Range and its branches cover one-ninth of the territory of South America, or an approximate area of two million square kilometers, attaining its widest expanse in Bolivia, where it extends from the Real (Royal) or Interior Range to the Western or Exterior Range, a distance of 750 kilometers—region of Lake Titicaca, 18° south. The length of the Andes from the Strait of Magellan, at the southern extremity of Chile to Cape Gallinas at the extreme northernmost point of Colombia, is 7,500 kilometers. They are the highest man-inhabited mountains in the world, where human habitations are to be found at more than 4,000 meters above sea-level. One of these, the station of Punto Alto, is at 4,788 meters elevation on the slope of Titicaca on the Antofagasta-La Paz railroad. At 5,592 meters above sea-level, latitude 16° in Peru, there is a small settlement of Indian herders of whom The Geographical Magazine made special mention in 1917. The large cities of Potosí, La Paz (capital of Bolivia) and Puno are approximately at 4,000, 3,000 and 4,260 meters elevation, respectively. It can be said of Bolivia that it is the roof of America, as Pamir is the roof of the world.

The Andes mountains are the second highest in the world, next to the Himalayas in Asia. Mount Aconcagua, the highest peak, which is 7,130 meters above sea-level, is in latitude 32° S., in line with another high peak, Mount Tupungato, at 6,510 meters elevation, and also in line with the city of Mendoza. Next in height to Mount Aconcagua comes Cerro de Huascan, in Peru, at 6,721 meters, and Mount Sorata, in Bolivia, at 6,617 meters elevation. The average cubical dimensions of the Andes mountains in kilometers are 7,000 in length, 160 in width, and 4 in height.



RELIEF MAP OF NORTH AMERICA



RELIEF MAP OF SOUTH AMERICA

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PRINCIPAL MOUNTAINS OF SOUTH AMERICA

ANDES	Meters	ANDES	Meters
Aconcagua	7,130	Volcan Sajama (Bolivia)	6,424
Tupungato	6,550	Volcan Misti (Peru)	6,100
Cerro Mercedario	6,670	Nudo Cuzco	6,000
Cerro Porongos	6,052	Cerro Ampato "	6,950
Cerro Juncal	6,070	Huascan "	6,700
Mont Pissis	6,772	Chimborazo (Ecuador)	6,310
Cerro de Colorados	6,115	Cotopaxi "	5,943
Volcan Llullaico	6,620	Sierra Tocul (Colombia)	5,984
Volcan Lincancaur	6,000	Nevado Tolima	5,584
Monte Illimani (Bolivia)	6,400	Columna, Sierra Nevada (Vene-	
Monte Sorata	6,617	zuela)	5,000

MOUNTAINS OF BRAZIL

	Meters
Serra dos Orgaos	2,391
Agulhas Negras	2,994
Serra de Pirineos	2,932

AREA AND POPULATION OF THE PRINCIPAL COUNTRIES OF SOUTH AND NORTH AMERICA, 1919

	Square Kilometers (1 Square Mile = 2.5896 Square Kilometers)	Inhabitants	Inhabitants Square Kilometer
United States	110,000,000	110,000,000	12.0
Brazil	8,550,000	24,000,000	2.8
Argentina	2,950,000	8,000,000	2.6
Mexico	1,987,000	15,000,000	8.
Peru	1,789,000	4,600,000	2.7
Bolivia	1,470,000	2,650,000	1.8
Colombia	1,300,000	5,700,000	4.4
Venezuela	1,020,000	2,800,000	2.7
Chile	757,000	4,000,000	5.2
Ecuador	307,000	1,500,000	5.
Paraguay	253,000	800,000	3.
Uruguay	187,000	1,500,000	8.

PRINCIPAL RIVERS—SOUTH AMERICA

	Kilometers		Kilometers
Amazon.....	5,000	Jurua.....	2,000
Paraná.....	4,500	Pilcomayo.....	2,000
Madeira.....	3,240	Ucayale.....	1,900
Purus.....	3,000	River Negro of Amazon.....	1,700
San Francisco.....	2,900	Ica o Putumayo.....	1,600
Yapura.....	2,800	Tapajos.....	1,500
Tocantins.....	2,500	Uruguay.....	1,500
Orinoco.....	2,250	Mamoré.....	1,500
Paraguay.....	2,200	Beni.....	1,300
Xingu.....	2,100	Magdalena.....	1,300

MOUNTAIN SYSTEMS OF BRAZIL

The range of mountains on the coast of Brazil, which, together with all its ramifications, form the backbone of Brazil, cover a much larger area than the Andes mountains, in fact twice the area, or about 4,000,000 square kilometers, though considerably lower than the Andean range.

HAS THE ANDEAN RELIEF CHANGED?

Why is the mountainous region of South America the most densely populated? Have living conditions changed in the

Bolivian, Andean, and Patagonian regions? It will be noticed that the most densely populated districts of South America are the tropical mountainous regions, particularly in Brazil, Bolivia, Peru, Ecuador and Colombia. The climate of the plains of the Amazon is extremely warm and moist. It is specially remarkable that the indigenes of Bolivia and Peru have preferred the almost barren frozen Andean Punas to the fertile plains, which, under cultivation, will yield the largest variety of vegetable products known to man, but which climate, as that of the plains of the Amazon, is exceedingly warm. It was in the arid frigid regions of the high mountains of Peru that the Incas founded their highly cultured empire, not unlike the kingdoms of the Pharaohs of ancient Egypt.

The famous ruins of Tiahuanaco of Bolivia, which are now in a desolate waste, represent the handicraft of a civilization preceding that found there by the Spaniards at the time of the exploration of the new world. But it can hardly be believed that the nation, which had developed into such a powerful empire, could have prospered as the Empire of the Incas did in a semi-sterile region such as it is now. Therefore, the belief that the region of Bolivia has passed through a transformation in the upheaval of its soil, from an elevation of 1,000 to 2,000 meters, to more than 3,000 meters to which it has risen since that unknown imperial epoch, up to the present time, and that the whole Andean region has had a like change. When comparing the present soil formation of Patagonia, so desolate and arid that Darwin called it "Accursed Land," with that of the same region which produced the gigantic fossil fauna, among which remains we find the mammoth animals which only luxuriant forests could feed, and these very forests being now in a petrified form by the changes which thousands of years have wrought, it can not be doubted that the "punas heladas" of Bolivia have undergone a similar change.

European science, influenced by religious tradition, located the primitive home of man in Asia, and, later, when the first

fossil remains of man were found at Simia together with Proboscidea and colossal Rodens and Edentates, the wise men were then of the opinion that Europe was where man first appeared on earth. Ameghino, noted Argentine naturalist, on discovering the largest ossarium of big mammals which has yet been found, revealed the fact that the Pampa Argentina is the most complete page in the history of the world, for the reason that it has never been entirely submerged, and beginning with the cretaceous period of the secondary epoch, the various species of animals continued to record their evolution in this part of America without interruption for millions of years. So that on the side of the Andean range, which sprang forth from the waters during the Azoic or lifeless era, are the tertiary and quaternary terrains, which were the cradle of reptiles, mammals and man. Thus, it is explained, that the present soil of Argentina, Bolivia and Brazil constitutes today the largest fossil animal graveyard in the world, and which has contributed more than 1,500 species of fossils such as are not found anywhere else on the globe. It means, in fact, that South America has contributed one-third of the species of fossil remains which are known today.

At the time of the secondary epoch, when the cretaceous terrains of the Patagonia region appeared above the water, there was no such land as the Northern Hemisphere with exception of a few islands widely scattered in the northern vast watery expanse. What now constitute the mainlands of Europe, Asia and North America were yet under water. The Southern Hemisphere consisted then of a large tract of continental land including what is now Patagonia, the Pampas and a part of Brazil, which were united to Africa by a body of land which is known today under the name of *Arquelensis*, just as Patagonia was united to Australia and New Zealand by the lands of the Antarctic, which were under the icy regions recently discovered by Admundsen, the noted Arctic explorer. The present conditions of the Patagonia region are not altogether adapted for a stupen-

dous development of animal life, which were just the reverse conditions during the secondary epoch. The Andean range was very low and did not obstruct the moist winds from the Pacific Ocean as is the case today. The climate was moist and warm and the vegetation compared with the flora which we find today growing on the plains of the Amazon. The forests of palm trees and coniferous plants are to be found in a petrified state, covering large areas, among which are also found large trunks of the hardness of flint.

We find, in these petrified forests buried in the reddish sandstone, the petrified skeletons of mammoth animals which today are extinct, such as the *Dinosauru*, or huge crocodiles, measuring 30 meters in length; the *Miolania*, gigantic turtle with horns like those of an ox, and measuring four meters in diameter; the *Physornis*, a runner bird of prey twice as large as the ñandú (American ostrich) of the pampas; the *Peludos*, of the size of an ox; the *Parastrapotherium*, which was much larger than the elephant of the present day; the *Proroterido*, the primitive horse; and the *Pyrotherium*, which on migrating into Africa and later into Asia was transformed into *Mastodon* and *Dinoterium*.

APPEARANCE OF SOUTH AMERICA DURING THE TERTIARY EPOCH

During the tertiary epoch the appearance of the whole world changed. The Northern Hemisphere became continental, the Arquelensis, which joined South America and Africa, disappeared and South America took its present aspect. Therefore, the *Hebrew Cosmogony* results entirely in error. The southern part of the New World was the first habitation of animal life including man, for as man was one of the last mammals, it is not probable that on the South American continent becoming the primitive home of the bigger species of mammals, not excluding the ape, man would not have appeared also. The *Trigodon*, another monster about the size of the rhinoceros, inhabited the Patagonian region during the tertiary period, also the *Gliptodon*, a huge tatú or armadillo or "mulita," the shells of which

were used as houses, according to all indications, by the primitive man of the pampas, his contemporary, as is proven by the human remains found with fragments of burnt earth which were part of ancient fireplaces, with the remains of bones chipped and broken by blows, and those of the primitive man measuring one meter in height (about 39 inches). There are also found the complete skeleton of the *Megatherium*, measuring eight meters in length, and the *Toxodon*, corresponding in size to the hippopotamus, an aquatic making its abode in river streams. Some of these skeletons have been found with the points of stone spears and arrowheads of the first man of Patagonia, buried in the backbone and the bones of the leg. Also, skeletons of the *Smilodon* of the tiger family, with canine-teeth in the shape of a saw, and much larger than the species of Asia and Africa.

THE SOUTH AMERICAN OF THE TERTIARY AGE

The Scientific Congress, which met in Tucumán in December, 1916, and which was attended by the geologists, zoologists and other men of science of Argentina, declared the *Toxodon* to be of the tertiary epoch, adding that the spear and arrowheads found imbedded in the bones were genuine. Therefore, it remains a proven fact that the man of the tertiary epoch was an inhabitant of South America, and that he is not the exclusive patrimony of the so-called Old World, as is claimed by the wise men of Europe.

Ameghino, the naturalist, has received the fullest confirmation, since his death in 1911, regarding his conjecture of the existence of man in the Patagonia region during the tertiary era.

The celebrated naturalist, Agassiz, had already given it as his opinion that it would have been possible for man to have lived in America during the tertiary era, as Voltaire also stated in 1775 that man could have appeared at the same time in Europe and in America, and asked—"Could not man have appeared on both continents at the same time,

just as the fly did?" All that has been said has its attestation in the museums of La Plata and Buenos Aires, where they have complete skeletons of the animals described and that of the ape fossil of the Santa Cruz river in Patagonia, which, according to Mahoudeau, instructor in the Paris School of Anthropology, has more characteristics in common with man than any other.

CHANGE OF LIVING CONDITIONS ON THE PATAGONIAN AND BOLIVIAN PLATEAUS

As in the case of the Bolivian plateau, it will perhaps be possible to demonstrate later on that the same conditions prevailed there as in Patagonia and that conditions of life in general were very different from what they are today. It is probable that the same upheaval that caused the change in elevation of the Bolivian plateau, also caused the change in living conditions in the Patagonian territory, and that the change took place simultaneously in both places.

Were it not so, it could not be explained how the great Bolivian plateau could have been settled during the time of the Incas, inasmuch as the severity of the climate and the barrenness of the soil were such as to make the territory inadequate for the primitive inhabitants' first abode, when they could have selected the Andean slopes and valleys with an extraordinarily fertile soil and a milder and healthier climate than that of India, which had been the home of hundreds of millions of men since the remotest times. Besides, the formation of the soil of the pampean region, that is to say, its geological structure and composition, is identical with that of the eastern plains of Bolivia, Paraguay and a large area of the Amazonian region. The soil is of the same yellowish color and composed principally of sand and clay in almost equal proportions. The soil is rich in fossils of similar mammals, small shells forming large banks and other mollusks of salt and fresh water varieties, proving conclusively that these areas had been covered by water from the sea and by river-floods alternately.

The extensive salt-pits of the central part of the Argentine republic, which cover an arc circle 700 kilometers in length within the provinces of Rioja, Catamarca, Tucumán and Santiago del Estero, are not deep deposits of salt, but a thin layer of sea-water salt, like that found in the salt-pits of Jujuy, Salta, and on the great Bolivian plateau, which deposits were probably formed by the salt which had been dissolved by sea-water.

The Andean range was much lower than it is today, both in the northern and southern parts of the present territory of Argentina, particularly in the north, where the ground was so low that the waters from the Pacific Ocean would through several narrow passages inundate the territory of northern Argentina and southern Bolivia. We find today in southern Patagonia the big lake Buenos Aires, which is crossed by parallel 46° S., at 227 meters above sea-level, like a gigantic condor climbing the Andes, the waters of this lake flowing into the Pacific through the Barker or Las Heras River and into the Atlantic through the Deseado River. This communication between the two oceans had been maintained at many points of the Andean range before the upheaval, which was the fundamental and immediate cause for the stoppage of abundant rains easterly bound for the Patagonian region, and resulting in the disappearance of the gigantic flora which fed the largest fauna of mammals that has ever inhabited the globe. The Andean valleys of the Patagonian region, which were thus visited by the rain-laden winds from the Pacific Ocean, are today a vast expanse of fantastic petrified flint formations of what was a wonderful Patagonian forest in prehistoric times. The western slope of the region of Patagonia which is in Chilean territory, is noted for its magnificent forests which receive copious rains. This region is very similar to that of North America along the Pacific coast states of California, Oregon and Washington and the western coast of Canada.

CHAPTER V

THE VAST NATURAL REGIONS OF SOUTH AMERICA

SUMMARY

Description of its vast regions: *Region of the Andes*, *Region of the Plains*, divided into the *Plains of the La Plata* or the *Pampas*, the *Plains of the Amazon*, the *Plains of the Orinoco*; How was the soil of the Pampas, which cover one-third of the territory of South America, formed?—Opinions of Darwin, D'Orbigny, Bravard, Burmeister and Ameghino, regarding this formation—Analogous formation of the loess and the soil of the Pampas—Burmeister's error regarding the fertility of the Pampean soil. Fossils of the Pampean soil—The Patagonia of today and what it was during the tertiary epoch—The plateaus of the Brazilian System.

REGION OF THE ANDES

As hereinbefore stated, the mountainous regions of the Andes and its branches, which measure 7,500 kilometers in length, cover an area of 2,000,000 square kilometers, reaching to a height of 7,130 meters above sea-level at the Mount of Aconcagua (Argentina) and more than 6,000 meters elevation at other points in Argentina, Bolivia and Peru. The Andean range, which is several hundred meters in height at the extreme southern portion of Patagonia, increases gradually in height until it reaches parallel 32° S., with Mounts Aconcagua 7,130 meters high, and Mounts Tupungato, Mercedario and Juncal at more than 6,000 meters above the sea. It again attains considerable height farther north at the Bolivian frontier, with higher peaks in Bolivia and Peru.

From the extreme southern point of the continent the range is a heavy, massive main line till it reaches parallel 27° S., where it divides into two branches—the eastern branch, which is farther from the Pacific, is the Cordillera Real (Royal Range) in Bolivia. Between the two ranges lies the great Bolivian Plateau, which is 800 kilometers in length north and south and more than eighty thousand square kilometers in area.



PHYSICAL MAP OF
SOUTH AMERICA.

0 50 100 200 300 400 500 600
SCALE OF MILES.

Comparative Area.



45,215 Square Miles.

In Peru there are three parallel branches of the Andes, between which lie the extensive plains through which run the big rivers Marañón, or Amazon (five thousand kilometers long), the Huallaga and the Ucayali, which reach far into the interior of the country and are large navigable streams, particularly the Amazon, which admits steamers of 18 feet draught.

The Andean valleys of Peru and Bolivia are extremely fertile, producing coffee, cocoa, cotton, rubber and all the tropical products. The valleys of the eastern slope of Bolivia, called "Yungas," are the most fertile regions on the globe. The Pacific coast along the northern part of Chile and Peru has very little rainfall, but tropical products, such as sugar-cane, cotton, cocoa, etc., are raised in the regions where they have irrigation. The climate of the valleys and coast is very warm, but no fevers prevail. Mining is the main source of wealth in these two countries, as well as in Chile. These are the largest producers of copper, lead, zinc, silver and tin. Chile and Peru produce nitre and guano, the latter being used as a fertilizer. Peru and Bolivia also produce the well-known coca (from which cocaine is extracted), quinine and other medicinal plants.

The Yungas and the Bolivian plains, where the tributaries of the Madeira River (tributary of the Amazon), 3,000 kilometers in length and navigable as far as the Bolivian frontier, yield a large variety of vegetables, which cannot be exported either to the adjoining countries, to Europe, or to North America, due to want of transportation facilities. Rubber is the only product exported, as its commercial value warrants the payment of high freight rates. The tributaries of the Madeira River are the rivers Beni, Mamoré and Purus, and the tributary of the latter—Acre River—which flows in the territory of the Acre, is remarkable for its abundant rubber production. These rivers are navigable for small vessels, but the fact that the cataracts of the Madeira at the Brazilian frontier impede further navigation, makes the Guajamirin Railway to Port Velho an indispensable

route for the products of Bolivia that are exported to Europe and North America via the Madeira and Amazon.

The Andean valleys of Peru and Bolivia, which face eastwardly, have a larger rainfall than those facing westwardly or toward the Pacific Ocean, and are therefore more fertile. Peru, having an outlet through the Marañón and its tributaries to the Atlantic, and through its numerous ports on the Pacific, can export its products to all parts of the world, yet its principal source of wealth, like that of Bolivia, lies in its minerals. The plateaus, which are at 3,000 and 4,000 meters elevation, have the richer mines and are consequently the places which are more densely populated. The climate at 4,000 meters, which is the region of the *Puna Brava*, is not mild, the mean temperature being from six to ten degrees centigrade. On the Puna, at less than 4,000 meters and not under 3,000, the mean temperature is from twelve to fourteen degrees centigrade.

The rainy season starts in November and lasts until the following March. The hot months of the year are from August to November. The months of May, June and July are cold with frequent snows. The region of perpetual snow is above 6,000 meters, and still higher on the western slope. The Central plateau of Bolivia is the region for products such as potatoes and other vegetables which constitute the principal food of the Indian, who also cultivates quinoa and maize in the valley.

Ecuador is also in the Andean region. The Andes are here divided into two large branches which enclose a narrow valley called *El Callejón*. The two ranges called Oriental and Occidental, beginning from the equator as far as parallel 3° south, are united by a chain of high mountains called Páramo de Azuay, 4,500 meters above the level of the sea. The highest peak in Ecuador is the majestic Mount Chimborazo, 6,460 meters high. The most dreaded volcanoes of South America which are in the republic of Ecuador are the Cotopaxi, Sangay, Tunguragua, Cayambé, and also below the equator the Pichincha and others. It could be called the

"Land of Volcanoes and Earthquakes." Here we also find the most densely populated region—the plateau or Puna, which has a mild climate, though just below the equator.

Quito, the capital, which is 3,000 meters above sea level and at a few minutes distance from the equator, has by reason of its altitude a mean temperature of 15° centigrade, which is somewhat colder than the temperature of Montevideo and Buenos Aires, latitude 35° south, and the Tambo of Antisana at 4,500 meters elevation has the mean temperature of Petrograd—4° centigrade.

Ecuador has two seasons, the rainy or winter, and the dry or summer season, the latter being also the windy season. The winter lasts from December till May, and summer the remainder of the year. The region along the coast has very little rainfall, and, as has been observed for several years past, there seems to be a tendency to its complete cessation, as happened in Peru.

On the other hand, the Oriental region of the plains has a heavy rainfall which feeds many large rivers, tributaries of the Amazon, such as the Napo, Pastassa, Santiago and Tigre.

The boundary between Ecuador and Peru, which nature has pointed out by the Marañón, or Amazon, has been the source of a long dispute between the two countries, and in fact, Peru exercises authority over the Port of Iquitos and the territory on the north bank of the Amazon, farther north beyond the bend of this river where it changes its course from a northerly to an easterly direction. So, part of the tributaries of the Amazon—the rivers Napo, Tigre, Pastassa and Santiago—are in the zone occupied by Peru where it joins Colombia, with which country Peru also has a dispute on boundaries. It is possible that all these questions of boundaries between Peru and Chile for Tacna and Arica, and the boundary disputes between Venezuela and Colombia and between Colombia and Ecuador with Peru, will be submitted to arbitration before the tribunal of the League of Nations.

Whether this or some other means will be the solution of these boundary controversies, it can be affirmed at this time that settlement will be arranged before long, as the epoch of wars and conquests has terminated since the intervention of the United States of America in the European War. We still remember President Wilson's comment at the time of his departure for Europe to the Allied Congress, when he said in substance that the governments of America which will not try by all means to prevent their peoples from being incited into war to settle their international disputes will be responsible to the world for their failure. These remarks were prompted by the outrages committed by the mob of Peru and Chile in the Tacna and Arica dispute.

Since the opening up of the Panama Canal, the Republic of Ecuador has planned to turn the commercial route to the Pacific, and to this effect a railroad line has been constructed from Quito to Guayaquil and another one is projected to extend from Port Bolívar on the Gulf of Guayaquil, to the Santiago River, a tributary of the Amazon. The Andean range at Pasto in southern Colombia separates into three smaller ranges called Oriental, Central and Occidental, all being less than 6,000 meters high. These valleys, which extend north and south, are drained by the Magdalena and its tributary, the Cauca, neither one of them being difficult to navigate. The Magdalena is navigable only by small steamers as far as Girardot, which is the port for Bogotá, the capital of Colombia. The Atrato River also runs in a northerly direction, as does the Magdalena, and flows into the Sea of the Antilles. The climate and products compare with those of Ecuador, and in addition, Colombia produces platinum and emeralds, which are not to be found anywhere else in the Andean region. On the east side of the Andes, as in the other countries of the Andean region, are immense plains drained by the tributaries of the Amazon, remarkable for their fertility and variety of vegetable products, among which rubber is the most valuable.

The principal commercial products of the Andean valley

are coffee, cocoa and quinine. The Putumayo and Yapura, tributaries of the Amazon, and the Inírida and other tributaries of the Orinoco, drain this region. The eastern range branches off into northern Venezuela and forms a mountainous zone to the coast of the Sea of Antilles; it has fertile plains, and its climate and corresponding products vary with the altitude, as in the other mountainous districts of the Andes. No point in Venezuela is over 6,000 meters above sea-level. The Orinoco, which is 2,000 kilometers long, drains the plains extending south of the Andes as far as the Parime range, which separates them from the plains of the Amazon. The Orinoco is a large navigable stream and a very important commercial route to the Atlantic. The plains of the Orinoco are adapted to cattle-raising.

A résumé of all that has been said regarding the countries in the Andean region north and south of, and including Bolivia, and which we find to have the same structure, can be given as follows:

First. Plateaus or punas, varying from a mild to a very cold climate, scanty vegetation, large mineral wealth and a dense population dependent on the mining industry.

Second. Valleys of the Andes at a low elevation, with an abundance of tropical vegetable products, such as coffee, quinine, sugar, cotton, etc., cultivated with great care and in sufficiently large quantities to supply local and foreign markets.

Third. The plains drained by the tributaries of the Amazon, which among other products furnish high-grade lumber and rubber to the markets of the world.

THE PLAINS

The plains extend from one end of the continent to the other, a distance of 7,000 kilometers north and south and a maximum width of 5,000 kilometers east and west in the region of the Amazon along the line of the equator, occupying two-thirds of the continental area, or 12,000,000 square kilometers in all. The plains are divided into three large

zones, or slopes, called Plains of the Orinoco, Plains of the Amazon, and Plains of the La Plata or the pampas.

The plains of the Orinoco occupy more than 1,000,000 square kilometers, mostly in Venezuela. The land is well adapted to cattle-raising, though the climate is very warm, which with its long dry spells makes it unsuitable for English breeds, which the packing industry prefers. Native cattle can be raised successfully as in Paraguay and Brazil.

Humboldt, in describing the plains of the Orinoco, says: "When, through the vertical effect of the sun's rays which no cloud can obstruct, the parched weed falls like dust and the hardened soil cracks open as if disturbed by a violent earthquake, then if opposing winds clash on the surface, and the clashing terminates in a circular motion, the whole plain presents an extraordinary spectacle. Vapor-like, the sand ascends with the rarified whirlwind, perhaps charged with electricity, like a dark funnel-shaped cloud with its point sliding over the earth like the roaring water-spout, which is so much dreaded by the experienced navigator. The skies, which appear depressed, cast only a semi-day light blurred and livid across the desolate plains. The horizon seems to close in abruptly, tightly hugging the desert and squeezing the heart of man. Suspended in atmosphere which the horizon conceals, the burning, dust-like sand feeds the sultry heat in the air. Instead of coolness, the eastern breezes bring on new heat from some place long under the rays of the sun. The water-puddles which the palm-tree shades, but which the sun has robbed of its verdure, gradually disappear and go. Animal life falls into a lethargy; the crocodile and the boa lying deep in the dried clay appear to have lost all sense of motion. Everywhere the drought announces death, and everywhere it besets the terrified traveler, who is deluded by the resplendence of the rays of reflected light giving the appearance of an undulated surface. Cattle and horses roam aimlessly about enveloped in clouds of dust, tormented with hunger and an unquenchable thirst. The former bellowing plaintively, the latter with necks stretched

against the wind lustily inhaling the air, trying to locate some pool of water not yet swallowed by the rays of the sun. When after a long drought the welcome rainy season arrives the scene of the desert changes. The pale blue of the sky which until then had been devoid of clouds, takes on a lighter hue. The Southern Cross is hardly discernible in the night across the darkened space and hardly has the dampness touched the surface of the earth when the mist-laden desert is to be seen covered with a variety of grasses. Later the moistened clay rises beyond the edge of the swamps; a sudden noise is then heard as of an explosion of a small marshy volcano, as the soil rises and shoots up in the air. He who happens to be familiar with this phenomenon rushes away on its being announced, as it means that a monstrous aquatic serpent or a crocodile is leaving its grave as the first water ripples form and awaken it from its seeming death."

The plains of the Amazon, which have an abundance of vegetation, occupy half of the area of Brazil and a large zone in the adjoining countries—Colombia, Ecuador, Peru and Bolivia—or about 7,000,000 square kilometers, drained by the great river and its big tributaries. They slope slightly from west to east and territory on both the northern and southern hemispheres is drained by tributaries of the Amazon. These rivers form the largest fluvial network in the world with 50,000 kilometers of navigable waters, the combined length of which could circle the globe at the equator with 10,000 remaining kilometers, which is the distance from the La Plata to the City of London. Their great vegetable wealth has only in part been developed for want of transportation facilities, as is the case in many other wealth-producing districts of South America. No other part of the world offers as fine a grade and as large a variety of lumber, including cedar, pine, ebony, *lignum-vitæ*, jacarandá and rosewood. The industries are limited to the extraction of India rubber, rosin, etc. The climate of the Amazonian region is equatorial, that is, it is a uniform high temperature. There is no dry season as in the tropical regions; the

rainfall is heavy the entire year. Agassiz, who explored this region, gave the name of "Marea Semestral" (semi-annual tide) to the flood-tides of the northern and southern tributaries, which alternate every six months. It is a well-known fact that the Amazon runs parallel to the equator and that its affluents lie in both hemispheres. The rains follow the sun and every six months the rainfall is heavier alternately in each hemisphere. The heavy rains temper the climate and so it is not as warm as it is in other equatorial regions. According to Agassiz, the maximum temperature is not over 30° centigrade and the climate, though somewhat unhealthy, is not unsuited to human habitation, as are parts of India and certain equatorial regions of Africa. So, one half of Brazil is covered by the plains of the Amazon and the other half by the mountainous region of the coast.

The variety of vegetation distributed over these valleys is so great that it divides them into belts, as follows:

First—The Palm Tree Region occupies a wide strip on the banks of the Amazon in Brazil, Colombia, Ecuador and Peru, and produces a diversity of tropical fruits, among which are bananas, dates and cocoanuts, and another palm, some of which grow to twenty-five meters in height, others very small with leaves so wide that the Indians use them for roofing their houses. Agassiz counted more than one hundred different varieties of palm trees in this region.

Second—The Region of Tree-like Ferns occupies a belt 800 kilometers wide across the whole width of the Amazonian slope.

Third—The Region of Virgin Forests has an immense wealth of gums, rosins and medicinal plants, and extends from the mouth of the Amazon to Bahia. This is the zone of the gum-extracting industry.

Fourth—The Coffee, Tobacco and Sugar Region includes the plains and valleys of eastern Bahia as far as Santa Catalina. Four-fifths of the coffee consumed throughout the world comes from Brazil and most of it is exported through Rio de Janeiro and Santos.

Fifth—The *Cotton Region* extends from Pará to Rio de Janeiro.

THE PAMPAS OF THE LA PLATA

The pampas of the La Plata, which extend from the Brazilian transversal region (Sierra Parecis), latitude 20° S. to parallel 40° S., a distance of 2,000 kilometers north and south, are noted for their big forests, which lie in the northern part and are named Chaco and Paraguay, and which produce the hardest woods known—the lapacho, ñandubay, quebracho, etc.—and are also noted for their magnificent prairies which, lying in the southern part, are nowhere equalled in the raising of live stock for meat purposes, and in the production of wool. Live-stock raising has become a scientific industry and the agricultural industry has been developed to the extent that Argentina is to-day one of the largest grain-producing countries of the world. This is “Pampa Fertil,” which occupies the southeastern portion of the La Plata basin, including the whole of the Province of Buenos Aires as far as the Negro River. This is the most favored of all the regions of Argentina as to fertility of soil, mildness of climate, abundant rains and accessibility for communication with the rest of the world, through its large and important ports—Buenos Aires, Rosario, La Plata and Bahía Blanca. Its climate compares with that of southern Europe; a sub-tropical climate, in other words, a temperate climate with no cold season. Four months, June, July, August and September, the thermometer registers a minimum temperature of 5° centigrade. It rains the year round, with a heavier rainfall during the Spring and Summer, though more rainy days during the winter months. There are four months with a mean temperature of 20° C. Few days during the summer season have a temperature exceeding 35° and less than 5° during the Winter season, along the eastern border. Farther in the interior, in Córdoba for instance, the maximum is 43° C. and the minimum 8° C. below

Origin of the
Pampean Soil

zero; at San Luis 40° maximum above and 7° minimum below zero; Victoria, in the pampean territory, 40° above, 11° below. The maximum temperature of Montevideo is 38° and Buenos Aires 40°, which takes place every five years or more. In fact, *from a climatological standpoint, Montevideo is the most fortunate city in the world*, for added to its advantage in having a sub-tropical climate, the fact that it is a peninsula on high ground and open to the ocean winds, it enjoys a maritime climate during the Summer months when those winds prevail. The reader may refer to L. C. Bollo's "Climatologia Platense," Montevideo, 1916, Libreria Barreiro y Ramos.

The northern part of the La Plata plains (Chaco, Paraguay, Matto Grosso of Brazil, eastern plains of Bolivia) which, as we have said, is covered by forests among the most valuable in the world from a standpoint of lumber material, is called the *Northern Littoral*, which it derives from its big streams the Paraná and the Paraguay, which, together with the Uruguay, form the great estuary of the La Plata. The Paraguay, a tributary of the Paraná, penetrates into the heart of the continent and is navigable almost to its source, its principal ports being Cuyabá and Corumbá, which are in the heart of Brazil. Port Suarez, which is opposite Corumbá on the plains of Bolivia, is a promising port for commercial communication between this region and the ports of Montevideo and Buenos Aires. Cuyabá is in latitude 16° S. while Montevideo is in latitude 35° S., or a distance of nearly 20 degrees, approximately 1,200 miles, which have the service of several steamship lines. This is the *future great important route from the La Plata to the Amazon*, as the Arinos River, a tributary of the Tapajos, one of the largest tributaries of the Amazon is just a few miles distant from the Paraguay where canal communication could be established to connect all the South American streams. Captain Bossi has written a book in regard to navigation of upper Paraguay, giving the details as to the facilities for the enterprise. It is yet remembered in Brazil that pieces of artillery have

been transported from Cuyabá via the Paraguay and after crossing a few miles by land have been shipped at Port Velho on the river Arinos, the tributary of the Tapajos, finally reaching the Port of Pará or Belem, via the Amazon. The reader can readily form an idea of how important these navigation connections would be within the interior of the South American continent through lands which embrace all climatic belts with an abundance of the most valuable products of the soil, over an area more than 2,000 miles in length from the equator south to Buenos Aires and Montevideo, a distance of 35 degrees. This northern littoral has a warm climate with its dry season during the Winter. A large portion of Matto Grosso, lying in the valley of the La Plata in Brazil, has an equatorial climate with a mean annual temperature of 20° C., and rain the year round.

Referring again to the soil of the Fertile, or Southeastern Pampa: Throughout the whole expanse of this vast plain, under a growth of vegetable mould and under the sandy marshes and shell banks, the soil is composed of a clayish sand to a depth of from fifteen to twenty meters, and as much as fifty meters in some places. It varies in color from a dark gray in certain parts to a whitish and yellowish hue in others. This soil formation lies uncovered on the banks of the rivers and on the hills and high ground where the mould has been carried away by the water. Large formations of solid rock, called Toscas, composed of lime, clay and sand, are also found. The pampean soil does not contain fossil sea-life, but a great quantity of land fossil mammals, such as the *Megatherium*, *Toxodon*, and other gigantic animals, which we have already mentioned. Fresh water mollusks and varieties of salts have been found. The soil contains a certain amount of lime which emits carbonic acid whenever brought in contact with sulphuric acid. D'Orbigny referred to this soil as "Pampean Formation" and Darwin called it "Pampean Slime." The former considered it superior tertiary soil, while the latter believed it to be a late quaternary. Bravard, another great naturalist, was in

accord with D'Orbigny. Burmeister, at one time Director of the Buenos Aires Museum, claimed it was quaternary and corresponding to the Deluge period in Europe. The artesian wells in the city of Buenos Aires show this pampean formation to be thirty meters in depth, and in excavations between the La Plata and the Tandil ridge of mountains it is found to have a depth of fifty-six meters. This kind of soil is not to be found beyond the Colorado River, which boundary Darwin pointed out as being the extent of this formation. At Mendoza, which is 800 meters above sea-level, the formation described is fourteen meters deep and has the same gigantic fossil mammals: *Megatherium*, *Mastodon*, *Gliptodon*, etc. The soil formation in the San Luis district is the same, according to Burmeister. It is also found between Entre Rios and Santa Fé, between the rivers Uruguay and Paraná, in the Oriental Republic, a large part of the Chaco, in Paraguay, and the eastern plains of Bolivia. This soil formation continues to a great height on the Mount of Montevideo. The southern part of the Republic of Uruguay is also covered with humus, or vegetable mould. It is found on the river Negro, near Mercedes in Uruguay, along the rivulets Coquimbo and Sarandí, and at Talar where the large deposits of gigantic fossil mammals are found. But nowhere in the pampean soil is there any fossil sea-life, which proves that it does not owe its formation to the action of sea-water. Not a vestige of marine infusoria is found, even with the aid of the microscope. The question arises, How was the pampean soil formed? According to D'Orbigny, Darwin, Bravard, Burmeister, Ameghino and other sages, several have been the factors which have contributed to the formation of this soil. Ameghino, who knew more about the soil by reason of his having always lived in the country and who therefore made a closer and longer study of it, says that many have been the causes which together have shared in its formation, principally the action of the winds (the theory also advanced by Bravard) which have carried the material during heavy windstorms, as in the case of the "loess" which

form the soil of China. It represents the accumulation of material which the winds have piled up for centuries. The loess of the Rhine are of like origin.

Richtofen, the geologist, was the first to demonstrate the origin of the loess caused by the winds in China, to which conclusion he arrived after a very close study of the Chinese soil. The loess soil which formed a border around the deserts of Central Asia specially attracted his attention. The wind-storms of that region caused him to understand the action of the winds on soil formation. The dust which is carried by the winds is the last product in the pulverization of the sand. It is carried to the edge of the dry belt, where it precipitates through the action of the rain, or falling by its own weight becomes fastened to the weeds, the roots of which have left as traces the little canals characteristic of the loess soil. By erosion the rain-waters and the river-streams have transported the loess formation for long distances and deposited it in the form of alluvions at the bottom of lakes and on the banks of rivers. According to Fritch, the volume of dust which was transported in 1863 by the trade-winds of northeastern Sahara to the Canary Islands amounted to 4,000,000 cubic meters. This dust is similar to that of the loess of China, which form its yellow soil, similar to that of the pampas. Loess soil formation covers at least 20 per cent of the surface of China, the region of the Mississippi, the pampas and other regions. He who has witnessed the cyclones produced by the Zonda winds of the plains of San Juan in the republic of Argentina, which are similar to those of the simoom of the Sahara, can very well appreciate the powerful action of the wind as a carrier of the material which has made the pampean soil what it is. Ameghino affirms that the pampean soil is not of marine origin but that it is the result of the combined action of the rains, rivers, winds and the subterranean forces, which have caused depressions and upheavals of the soil. He has shown that the soil at the foot of the Córdoba ridge is a quartz sand which gradually changes to impalpable mud at the

mouth of the Paraná. This proves the fact that the greater part of the material which forms the pampean soil between Córdoba and Rosario comes from the decomposition of rock of the Córdoba ridge of mountains. The fragments of rock from the mountains first form into boulders, the separate particles of material being carried away in the form of sand to a greater distance, and the material which comes from the decomposition of feldspar is carried to the valley of the Paraná, where part of it remains, and part of it, together with clay which the Paraná carries from the north, is finally deposited on the plains of Buenos Aires. So it is everywhere; *the pampean soil contains a larger proportion of sand as it nears the mountains and a larger proportion of clay the farther the distance from the mountains that formed it.* The soil of the republic of Uruguay, which is farther away from the mountain range is much harder, due to the large percentage of clay over sand. The action of the carrying winds is very evident in many places where the sands and dirt have formed deep banks where fossil remains are buried.

Among the opinions given by men of science, regarding the fertility of the soil of the pampas, it is well to note the serious error committed by Burmeister when he asserted in his important work, "Physical Description of the Republic of Argentina," published forty years ago, that the soil of the pampas was unfit for cultivation and that live-stock raising would be the only industry. It was Burmeister's belief that plants inferior to those native to the soil should be the kind cultivated, and cited the lands of Brazil, where the gigantic forests were cut down and in their place coffee-trees and sugar-cane were planted. He said: "The pampas produce only miserable grasses consisting of plants inferior to wheat that the planters want to cultivate. These attempts will have no success. These are positive facts," he said, "which are proven by Liebig's Agricultural Chemistry." But experience has refuted the erroneous statement which so injured Argentina, for to-day the pampas lead the world in

grain production, sending *five million tons* of wheat, corn, barley and oats to European and North American markets.

FOSSIL REMAINS OF THE PAMPEAN SOIL

In conclusion, and so that the North American reader may be able to compare its antiquity with that of the soil of the Northern continent, we will briefly enumerate the fossil mammals of the pampean soil, as follows:

Primates—Besides the fossil remains of man, there are in Brazil and Argentina, the *Protopithecus* of Brazil (Lund) and the *Protopithecus Bonaerensis* (Gervais and Ameghino), which compare with the *Anthropomorphus*. There are four species of *Primates* (*Cebus*) and other apes of Brazil.

In North America the true fossil ape of the tertiary age is not known, and the apes of today, natives of Central America and Mexico, are South American types. In Europe and Asia they appear in the Miocene epoch, but these species have no predecessors in the most ancient formations of that same region, and it is evident that they came from South America, where they had lived, crossing over the *Arquelensis* or the continent which united America and Africa. The apes called "*Homunculideos*" or "*Hombrecillos* (little men) *de Santa Cruz*" in Patagonia, are, in the opinion of Dr. Mahoudeau, Instructor in the Paris School of Anthropology, the species which bear closer resemblance to man and which show closer relation to the common trunk from which man and ape originated. It is possible that the predecessor of man had its origin in the Pampa Argentina.

Cheiroptera—Seven species of bats have been found.

Carnivorous—*Smilodon populator*, stronger than the lion of today, and stronger than the *Smilodon* which is now on exhibition at the Museum of Natural History in New York City, the fossil remains of which were found on soil of the United States of America.

Canis—Eleven species of dogs and the fossil *Canis Azarae*.

Artotheriums—Gigantic bears unlike the present species.

Tipotéridos—Order discovered by Gervais and Ameghino. Includes the tipoterium, of which there are three species, and the Toxodon, of which five species have been found corresponding in size to the rhinoceros.

Solipede—Three species of horses have been found, among them the *Equus Argentinus* (by Burmeister). The South American horse of the present day was introduced by the Spaniards.

Macrauchenia—Twice as high as the horse, and combining the characteristics of the giraffe, camel and llama.

Proboscides—There are two species of Mastodons: Humboldt and Andium. No fossil elephants have been found.

Ruminants—There are several species of *Auchenia*, *Cierves*, *Antelopes*, etc.

Edentates (toothless)—The *Megatherium* family.—The American *Megatherium* is much larger than the elephant. It is on exhibition in nearly all the museums of the world. There are five smaller species, and several of the *Milodon* type. Among the *Edentates*, mention must be made of several of the animals with armour-like coverings not unlike that of the Armadillo. These are the *Gliptodon* species with an armour covering which in some places measures two meters in thickness; exhibited in the museums of La Plata and Buenos Aires. These armour coverings were used as tents by the fossil man of the pampas of the tertiary age, as verified by marks of the handiwork of primitive man, and which can not be disputed.

THE PATAGONIAN REGION OF THE PRESENT DAY AND WHAT IT WAS IN THE REMOTE PAST

Patagonia, which was at one time one of the most fertile regions on the globe, is today a vast arid tract, almost uninhabitable for reason of its sudden and extreme climatic changes and limited rainfall. The winter temperature falls as low as 30° C. below zero at Colonia Sarmiento and Buen Pastor on the Chubut, and to 28° C. below in many places; the summer temperature rises at times to 40° C.

above zero at points on the rivers Chubut and Negro, and in the southern pampas. This contrast is due to the dryness of the air, the rainfall being exceedingly low throughout the Patagonian region excepting on the Andean valleys of the Neuquen and a few other places. Onelli, the Argentine explorer, who served as a member of the Commission on boundaries with Chile, and is therefore thoroughly familiar with this region, says in his recent book, "Climbing the Andes," B. A., 1916 edition: "Patagonia has a uniformly monotonous and gloomy aspect; its step-like graded plateaus alternating with its mountains of basalt, appear astonishingly duplicated along the line from the Negro river to the Strait of Magellan, 15,000 sq. leagues." The abrupt and smooth coast line is destitute of all vegetation, and its gloomy appearance can, perhaps, be better imagined than described, for this is the region to which Darwin applied the term "Accursed Land," to which we have alluded before. The land which can be utilized for sheep-raising purposes covers an area of 8,000 square leagues, figuring on about 1,500 head to a square league or a total of 12,000,000 sheep, which is a small figure, for were the rainfall heavier a much larger number could be accommodated. The remaining 7,000 square leagues of surface will remain unserviceable for an indefinitely long time, due to the difficulty, and, I dare say, impossibility of finding fresh artesian water. The fertile part of the Patagonian region is that which penetrates into the heart of the Andes through the "*Valles Cordilleranos*" (valleys of the range), comprising 4,000 square leagues of fertile soil with abundant rains, large forests and metals which can be easily exploited through the advantages of an abundant supply of fuel and motive force, which can be obtained from the numberless streams and water-falls found in the district. This region can be properly referred to as the "*Switzerland of Argentina*," having even larger lakes than those of Switzerland in Europe, surrounded by high mountains. We find there the great lakes: *Argentino*, which is 120 kilometers long by 50 kilometers wide; *Buenos Aires*

Lake, 150 kilometers long; *Nahuel Huapi Lake*, resembling a gigantic octopus, 100 kilometers in length, and many others. There are more than 100 lakes of considerable size. The lakes of the Andes, which Frey numbered from 1 to 70, and which are considered large bodies, do not appear on the maps.

THE STERILE PAMPA

The sterile pampa region with its barren deserts occupies the northwestern part of Argentina as far as the foot of the Andes mountains. It is sandy in certain places and saline in others; very little rainfall with a tropical African climate during the summer season, and very cold in winter. The only vegetation found consists of a species of feeble, thorny shrubbery. High temperature of 46° centigrade at Santiago del Estero, and 44° at San Juan, Rioja, have been recorded, temperature such as is recorded in the Desert of Sahara. In the very same region the thermometer registers six and eight degrees below during the winter months, and has fallen as low as twelve and fourteen below, at San Luis and Mendoza.

THE MOUNTAINOUS REGION OF BRAZIL AND THE PLATEAUS OF THE BRAZILIAN SYSTEM

The great system formed by the Coast Range and many other chains of mountains, attains its maximum height (2,944 meters) at Agulhas Negras, and 2,932 meters at the Pyrenees in Goyaz. It covers an area of 4,500,000 square kilometers, which is equal to almost half of the territory of Europe.

Two million square kilometers of this area have a healthy and temperate climate. This comprises the most densely populated and most widely cultivated region including the states of San Paulo, Rio Janeiro, Bahia, Pernambuco, Santa Catalina, and Rio Grande del Sur. Most of the coffee, tobacco, cotton, sugar-cane, lumber, and tinctorial plants produced, come from the valleys, while

the plateaus are being utilized for cattle-raising, where there are more than 28,000,000 head at the present time. One of the leading regions of the live-stock industry is Matto Grosso, situated in upper Paraguay, known as the plateaus of the Parecis Range, and which is now accessible by the railroad recently built from Corumbá to San Paulo and Santos. The jerked beef, prepared in this region, is shipped via the Paraná and the La Plata, for consumption in Brazil. Another very important live-stock state is Rio Grande del Sur, which adjoins the Republica Oriental del Uruguay, and ships prepared beef via the Uruguayan Central Railroad to Montevideo, whence it is exported to foreign markets. This route is also used for the exportation of wool, hides, fats and other animal products, the value of which amounts to more than 40,000,000 dollars annually. Live stock is also an important industry in the states of Goyaz and Minas. Not so much beef is exported, as the consumption among the 24,000,000 inhabitants of Brazil is in itself an important item, figuring that the proportion is a little more than one animal for each inhabitant, while Argentina has 30,000,000 head of cattle and 67,000,000 head of sheep for 8,000,000 inhabitants, and Uruguay for its one and a half million population, has 8,000,000 cattle and 20,000,000 sheep.

The United States of America at one time exported large quantities of beef, for in 1890 their 65,000,000 head of cattle were more than enough for the population of 60,000,000, but they are today importing large quantities of beef from the La Plata region in order to keep pace with the consumption of their 110,000,000 population. It is possible that Brazil will be able to increase its production of live stock and has accordingly taken very good steps to effect it.

CHAPTER VI

HYDROGRAPHY

SUMMARY

Influence of the Andean Range on the Hydrography of South America—The Line of Perpetual Snow on the Andes—The Great Hydrographic Slopes of South America—1st, La Plata Slope—2d, The Amazonian Slope—3d, The Slope of the Orinoco—4th, Pacific Slope.

INFLUENCE OF THE ANDEAN RANGE ON THE HYDROGRAPHY OF SOUTH AMERICA

The Andean Range is the water-shed between the two large drainage slopes, one over a long and narrow tract, the other extending over nearly the whole continent. Due to its great height this range has a marked effect on the climate and the rainfall, in obstructing the moisture-laden clouds carried by the eastern winds.

THE LINE OF PERPETUAL SNOW ON THE ANDES

It is noticeable that the eastern slope has a heavier rainfall than either the plateau region or the western slope of the Pacific. The line of perpetual snow is at a higher altitude on the mountains along the Pacific Coast than on the eastern range where the snowfall is heavier. Perpetual snow is at a height of 6,000 meters on the western range of Bolivia, while at an elevation of 5,200 meters on the eastern cordillera. It is of course a natural fact that the line of perpetual snow descends to a lower elevation the farther the distance from the equator, to wit: at Mt. Aconcagua 33° south, 4,482 meters elevation; at Mt. Sarmiento, 55° south, 1,072 meters. As the rainfall of Ecuador is heavier than in Bolivia, the line of perpetual snow is higher, or 4,600 meters on Mt. Cotopaxi, which is situated almost on the line of the equator.

THE GREAT HYDROGRAPHIC SLOPES OF SOUTH AMERICA

The eastern or Atlantic slope consists of three slopes drained by the three large rivers of South America: the Orinoco, the Amazon and the La Plata, the first two being 2,200 and 5,000 kilometers long, respectively, and the third is formed by the rivers Paraná and Uruguay, 4,500 and 1,500 kilometers, respectively. In the chapter devoted to "Means of Communication" we show in detail how easy it would be to establish communication between the La Plata and the Amazon through the rivers Paraná and Paraguay and the Tocantins, tributary of the Amazon, a project which should attract the attention of enterprising Yankee concerns to whom nothing seems impossible. This route could be established far more economically than the one contemplated by the English, in Africa, from the Cape through the South African republics, through the Congo and the Nile to Cairo, Egypt, a part of which is already completed. The reader can easily observe the conditions of navigation of South America, by consulting the map on "Communications" found in another part of this book, with reference to river communication and railroad lines now in operation as well as those being planned. The so-called Rio de la Plata is a big estuary formed by the Paraná and Uruguay, both of which have their origin in the tropical region of Brazil. The La Plata is 180 miles wide at its mouth, where it flows into the Atlantic Ocean, between Cape Santa Maria in Uruguay and Cape San Antonio in Argentina. The distance across the estuary, between Montevideo and Buenos Aires, is 120 miles and 30 miles from Buenos Aires to the nearest point in Uruguay. The part of the river from Montevideo, toward Buenos Aires, is fresh river-water, and east of Montevideo salt sea-water. Montevideo is a seaport. The Paraná is a very large stream not unlike the Mississippi of North America, as to abundance of water, general course and different climatic belts through which it flows. The Paraguay, the principal

tributary of the Paraná, though far more useful as a navigable stream, compares with the Missouri River. It is navigable by small steamers almost to its source. The great central zone of Brazil, with its immense wealth of lumber and live-stock, can have direct communication with the Atlantic Ocean through the Paraguay into the Paraná and the La Plata. Bolivia, which is devoid of seacoast though nearer to the Pacific than to the Atlantic, has outlet through the Paraguay, with Port Suarez on one of the tributaries of the above river which flows through Bolivian territory, and far more advantageous for Bolivian commerce than the Beni, Mamoré, Madeira and Amazon. One steamship line connects Port Suarez with Buenos Aires and Montevideo.

The Amazon, which is 5,000 kilometers long, is the largest river in the world, both as regards volume of water and the number of its big tributaries. The combined length of the navigable streams, including the Amazon and its tributaries, and which extend to both hemispheres, is 50,000 kilometers. The Madeira, which flows from far in the interior of Bolivia, is 3,000 kilometers long. The Tapajos, Xingú, Purus, Tocantins are each more than 2,000 kilometers in length. The Negro is the main northern tributary. In our chapter "Means of Communication" we give a more detailed account as to the navigation and the importance of the tributaries of the Amazon.

The rivers of the Pacific slope are of very little importance, the principal streams being the Barker, Aysen, Valdivia, Bueno, etc., of the Chilean republic. It is a well-known fact that the northern littoral of Chile and Peru is a dry and riverless region. Ecuador has one large river, on the side of the Pacific, the Guayaquil. Colombia has the rivers Magdalena and Atrato, which are very important navigable streams.

CHAPTER VII

CLIMATOLOGY OF THE LA PLATA REGION

SUMMARY

Climate of the Coast Belt—Basis of Temperature of the Coast Belt—Temperature of the Pampean, the Central and the Patagonian Regions—The Law of Rains—Transparency of the Sky in the Various Zones of the La Plata Region.

CLIMATE OF THE COAST BELT

In addition to what has been said in describing the regions of the Andes and the plains, we will here supplement that which relates to the Climatology of the La Plata, which embraces the best known regions of the South American Continent, there being over 200 meteorological observatories scattered from Tierra del Fuego to Paraguay and covering the territory of the republics of Argentina, Uruguay and Paraguay, or from parallel 22° S. to 56° S. a distance of 700 leagues, or 34 degrees of latitude, which is half the length of the continent north and south. The meteorological department of Argentina is under the direction of North American meteorologists who publish a daily weather report or bulletin. The tract of land situated between and on the Uruguay, Paraná and Paraguay rivers is called *Littoral*, supposed to reach not only to Buenos Aires, but includes the Atlantic littoral as far as Patagonia.

BASIS OF TEMPERATURE OF THE LITTORAL BELT

The *Littoral*, which is the most thickly populated district of Argentina and Uruguay, has a temperate climate, which gradually gets colder as the distance from the equator increases and as is the natural result on all regions under 300 meters elevation. We give below the average temperature of

the last ten years beginning with the City of Asunción on the north :

	CENTIGRADE		
	AVERAGE	MAXIMUM	MINIMUM
Asunción (Capital of Paraguay).....	22	42	0
Corrientes (Argentine Republic).....	20	42	0
Salto (Republic of Uruguay).....	18	..	.
Montevideo (Republic of Uruguay).....	16	38	-5
Buenos Aires (Argentine Republic).....	16	40	-6
Bahia Blanca (Argentine Republic).....	14	42	-8

Montevideo has perceptibly the same average mean temperature as Buenos Aires, though not as warm in summer as the latter, and a maximum temperature of 38° C., which is recorded only about every eight or ten years, which is not the case in Buenos Aires, where this maximum is reached almost every summer. Buenos Aires has also colder winters, due to the cold winds which sweep over the city from the mountain range, and which winds have risen in temperature after crossing the estuary of La Plata, which waters have a minimum temperature of 5° or 6° C. above zero. The coldest time of day is between six and seven o'clock in the morning. It must be borne in mind that Montevideo has a maritime, and Buenos Aires a continental climate.

TEMPERATURE OF THE CENTRAL AND PATAGONIAN REGIONS

In Argentina, as the distance from the littoral or coast increases the intensity of heat or cold increases until, at the Pampa, there is a maximum temperature of 44° and 46° C., in the provinces of Santiago, Tucuman, etc.

The mean maximum temperature of this central zone can be compared with that of the warmest regions of the globe, as is shown by the following figures :

	CENTIGRADE	
	MEAN	MAXIMUM
Catamarca (Recreo).....		34
Santiago del Estero.....		35
Cruz del Eje (Córdoba).....		33
Uaadi-Halfa (Nubia).....		34
Masaua (Central Africa).....		34
Kartum (Soudan).....		33

Patagonia has an excessively cold winter climate, which goes down to 30° C. below zero at the Neuquen in Colonia Sarmiento and other places. In the summer the temperature rises to the other extreme, registering 42° C. on the Chubut at port Madrin on the Atlantic. Many are the places where the temperature rises to 40° C. in summer and falls to 25° below zero during the winter.

THE LAW OF RAINS

The rainfall gradually decreases towards the southern extremity, following the natural result of rainfall, being heavier nearer the tropics and lighter as it nears the poles. In the northern part of the *Littoral*, which comprises Paraguay, Chaco and the Mission district, there is a rainy season between April and September, with a heavy rainfall the remainder of the year. Farther south, between the rivers Uruguay and Paraná or Argentine Mesopotamia, the rainfall in the summer and winter is equal.

The following table shows the decrease in the annual rainfall (in millimeters) from north to south:

Asunción (Paraguay).....	1320
Concordia (Argentina).....	1070
Montevideo	934
Buenos Aires.....	930
Mar del Plata.....	690
Patagones.....	310

In the region of the sterile or midland Pampa, the decrease in rainfall is noticed the farther the distance from the Uruguay river between the parallels 30° S. and 35° S., which is the latitude of the Republica Oriental del Uruguay. The diminution is about at the rate of 100 millimeters for each 100 kilometers. Therefore, the rainfall of 900 to 1,000 millimeters on the coast of Uruguay is only 200 millimeters in San Juan, at the foot of the Andes, making irrigation indispensable for all agricultural products raised in this latter region, which, nevertheless, is the best wine-producing zone, its grape competing with the best made in Andalusia,

Spain, and in the wine-producing districts of Portugal. All the best grades of fruits and vegetables, native to the region, are also raised.

The Patagonian region has very little rainfall excepting at Neuquen (1,820 mm.) and at San Martín de los Andes; in a few other places it is considerably less. On the Patagonian coast the rains are few and far between, the maximum corresponding to Trelev, which is 560 mm. On the other hand, the rainfall on the Chilean side is from 2,000 to 3,000 millimeters, only equaled in the Amazonian region. Punta Arenas, on the Strait of Magellan, at a great distance from the Pacific, has little rainfall (400 mm.). Refer to L. C. Bollo, "Climatologia Platense" Barreiro y Ramos, Montevideo, 1916.

TRANSPARENCY OF THE SKY IN THE VARIOUS ZONES OF THE LA PLATA REGION

Regarding the condition of the sky, few places can compare with Uruguay in clearness and transparency, principally because the atmosphere is free from haziness and dust. This fact alone entitles Uruguay and Argentina to display the sun as their symbol together with the white and azure hues, which their flags unfold.

CONDITION OF THE SKY. A Perfectly Clear Sky is marked 100

LITTORAL ZONE	TEN-YEAR AVERAGE
Montevideo	51
Asunción.....	45
Buenos Aires.....	46
Bahia Blanca.....	44
MIDLAND ZONE	
Tucumán.....	58
Córdoba.....	53
San Luis.....	44
ANDEAN ZONE	
La Quiaca.....	38
Salta	56
Mendoza.....	35

CHAPTER VIII

THE NATIVE SOUTH AMERICAN

SUMMARY

Is there One Singular Type of Native South American?—Was South America First Settled by Men from another Continent?—The Various South American Races, According to D'Orbigny: Andean-Peruvian, Pampean, Brazilian-Guaranítica—The Races of South America do not descend from the Mongolians—The Americans were the first to use copper, which metal was unknown to the Egyptian, Asiatic and European peoples, and were the first to discover bronze which the South American introduced during the invasions of the Eastern Hemisphere—The Esquimaux of today, of American origin, invaded Greenland and Northern Asia.

IS THERE ONE SINGULAR TYPE OF NATIVE SOUTH AMERICAN?

We will not here discuss the origin of the American, who was considered, until just recently, a modification of the Mongol type, which it resembles slightly, though a great many of the nations of the South American indigenes are as different from the Mongols as they are from the Caucasians. The *Yuracares*, of the Mamoré river in Bolivia, and of whom D'Orbigny made a very close study, having resided among them for about eight months, are almost white in color and have a fine physique. The Chiriguanos of Bolivia, on the river Pilcomayo, have a light-copper complexion. The Imbabureños of Ecuador are as white of skin as the Europeans. The Cañazos, also of Ecuador, have an aquiline nose like the Jívaros of the Pastaza river, while the Záparos of the Napo resemble the Chinese. According to tradition, Manco Capac, who founded the Empire of the Incas, 1,000 years before the present era, had white skin and golden hair as had his wife.

WAS SOUTH AMERICA FIRST SETTLED BY MEN FROM ANOTHER CONTINENT?

Mr. Andres Lamas, well-known Uruguayan publicist, in his introduction to the work of Lozano, "History of the

Conquest of Paraguay, La Plata River and Tucumán," says: "We do not know of any American myth or tradition to which we can attribute the supposition that America might have been settled by emigrants from another continent."

"We find traditions of invasions, conquests, colonization, transmigrations, the supplanting of various tribes whose origin we ignore but who appeared to have been moving and operating within the same continent and coming from the interior of the mainland."

"We find traditions of civilized men of divers American races, traditions of white-skinned golden-haired men, of barbates, who have had more or less influence in the dominion, culture and destinies of peoples. *But there is no tradition to tell us that such and such a tribe or such and such men were the settlers of an uninhabited land.* On the contrary, each one in its turn appears, according to its respective tradition, to have functioned and established its dominion over people already occupying the premises, who either were or considered themselves aborigines. Therefore, not only is there want of a determined fact, myths and native traditions that will permit us to suppose that America was settled by immigrants from another continent, but the American myths and traditions existing are in opposition to this supposition. This is the opinion of one of the most celebrated historians of the La Plata, who, with great ardor and devotion, made a thorough study of these questions."

The opinion that became so general some time ago that the Mongolians had migrated into and settled in America, was due to the fact that many invasions into North America came from the North, but in South America we find that the invasions were just the reverse. Manco Capac went to Cuzco, from the South; the civilization which he founded and the palaces constructed in Tiahuanaco, all preceded Manco Capac's time and emanated from people that came from the South; the tribes that destroyed Tiahuanaco and

exterminated the inhabitants fifteen centuries ago, also came from the South; the great invasion, which put an end to the second dynasty of the Incas of Cuzco, proceeded from Argentina; the Yncasica civilization started from the South traveling in a northerly direction, going from Cuzco to Quito and thence to Ecuador; the Guarani race, which contributed a larger number of inhabitants to South America, started its invasion from Paraguay northwardly to the Amazon, the Orinoco and the Caribbean or Antilles Isles; the Caribbeans were Guaraníes; the Tupíes a family branch of the Guaraníes, moving northwardly drove away the indigenes from the territory where today stands Rio Janeiro. The Mexicans make mention of invasions which have come into their territory from the South.

If South America was the continent where the ape and the biggest ape first appeared, it is not altogether impossible that it also had human inhabitants contemporaneously with the Old World or even before. Could it be that the Atlantida of Platon is the Arquelensis, which united America and Africa? And do not the names of Atlantic and Atlas mountains indicate invasions by Mexicans of Tlascala who arrived from Western Lands, according to tradition of the indigenes of Old Berberia, now Marruecos and Tunes? There is no other language that could have applied these names distinctly of Mexican origin.

THE SOUTH AMERICAN RACES

According to D'Orbigny

Going back to the subject of the indigenous races of South America, we are indebted to the celebrated French naturalist, D'Orbigny, for a good classification based on the principal anatomical characteristics. Although it may not correspond exactly with the details given at a later date through anthropology, then an almost unknown science, he furnishes by means of his exactness in detail a perfect idea of the man of South America. The sage D'Orbigny resided

in America several years and was able to understand those peoples. The *Andean-Peruvian* race was of dark olive complexion, small stature, horizontal eyes and rather high forehead. It is divided into three branches: *Peruana*, *Anticiana*, and *Araucana*. Average height of the Peruano, 1.59 meters; large, aquiline nose; lips, medium; cheekbones not high; long, oval face, in fact, characteristics which the Mongolian does not possess. To this branch belong the Quichuas and Aimaras of the Peru-Bolivian Plateau, the founders of the Empire of the Incas, which, as we have said, attained civilization comparable to that of Ancient Egypt.

The *Anticiana*: average height, 1.64 meters; nose not uniform in shape; dark-olive complexion, more or less fair; forehead, not low; horizontal eyes; face, oval. To this branch belong the *Yuracares*, almost white in complexion, who live in the forests of Bolivia, and the *Mocetones*, etc.

The *Araucama*: Average height, 1.64 meters; complexion, very dark brown; face, almost circular; nose, short and flat; high cheek-bones; forehead, rather high. *Araucanos Ranquéles* and *Fueguinos* of Patagonia are descendants of the *Araucanos* of Chile, the *Pehuenches* of Patagonia and the *Aucas*.

The *Pampean* Race: Very tall; arched forehead, not low; horizontal eyes; dark-olive skin. This race inhabited the Pampa Argentina and the territory of Uruguay. It is divided into three branches: *Pampeana*, *Chiquitana* and *Moxcana*. The Pampean is tall of stature, averaging 1.68 meters in height; complexion, brown, dark-olive or reddish brown; long face; flat nose; very large mouth; high cheekbones; many are ferocious in appearance.

The *Patagones* and *Tehuelches*, of Patagonia, the extinct *Charrúas*, of Uruguay, and the *Tobas*, and others of the Chaco.

The *Chiquitana* and *Moxana* branches are scattered throughout the Bolivian plains of Moxos and Chiquitos.

The *Brasilo-Guaranítica* Race: Yellowish with a pale reddish tinge; moderate stature, average 1.62 meters;

rounded forehead; circular face; small protruding mouth, thin lips, cheek-bones somewhat regular; stockily built. The larger part of the indigenous population of Brazil, Paraguay and the regions of the tributaries of the Amazon belong to this race.

The *Querandíes*, who settled on the right-hand side of the La Plata when Buenos Aires was founded, belong to the *Guaraníes* branch.

THE RACES OF SOUTH AMERICA ARE NOT DESCENDANTS OF THE MONGOLIANS

We believe that upon inspection of the descriptive characteristics as given by D'Orbigny, regarding the principal American peoples, they will be found convincing enough to cause us to abandon the Mongolomanian idea of the sages who make of the Mongolian race an enormous bag wherein they cram all things about which they are unable to give a satisfactory explanation. The Peruvian race, which founded one of the greatest empires that have ever existed, is distinguished mainly by the fact that their cheek-bones are not high, contrary to the most noticeable characteristic of the Mongolians, which is predominant even among the races to which the Mongolians are related, as for instance the Magiares, and all the descendants of Mongolians found in Russia today. The *Guaraníes* and *Peruanos*, who represent, perhaps, the largest of the South American races, are also noted for their high cheek-bones.

The region of Pamir, which the believers of the Mongolian immigration idea have selected as the original home of mankind, and which place they claim was the starting point of the great invasions that went into Europe from Asia, is on account of its climatic conditions of excessive heat and cold during the opposing seasons, the contrasting changes between the places which are bathed by the rays of the sun and those in shade, as well as by its barrenness, lack of water and fuel, the least desirable location for human life to have grown and developed. Its present inhabitants are among

the most inferior of the Asiatic races of today. It can not be affirmed that the conditions of life may have been better, as was the case in Patagonia and even in the Desert of Sahara, for notwithstanding the untiring study of that region, by famous explorers, particularly the English, not even a vestige has been found which might establish the fact that there was at one time a more profuse vegetation or a partially advanced civilization, and not a trace that there might have been, in that particular region, a higher order of animal or vegetable life nor of a more civilized man. It is like the other legends, which treat about the antiquity of the white races of India, as the Dravidians, and that attributed to the Aryans, this latter legend having been completely disproved by the conscientious study of the most renowned investigators of a later period. The celebrated structures of India and everything that was considered remotely ancient, are found to date back only a few centuries prior to the conquest by Alexander the Great. Yet some of these novels are being used as a historical text today in certain universities. Like the oldest civilized regions of Egypt and Chaldea, though their history only goes back 7,000 years, these regions, due to their fertility of soil, were the centers of numerous organized nations, which found means of subsistence and proper living conditions for the successful development of the species. But what are 7,000 years against 18,000, which the Mexican traditions claim for their civilization, the antiquity of the Empire of the Incas and still the older civilization preceding that of the Incas, and which is attested by the ruins of Tiahuanaco?

There exists one fact which proves that the people of America exerted some influence in European civilization, they being the first to use copper, as in no part of the Old World was copper known, neither among the Egyptians who made use of brass many thousands of years before the Europeans did. As bronze is an alloy of copper and tin, it is natural to suppose that if copper was unknown to both the Europeans and the Egyptians, and known to

the native Americans, who used it as arrow points, the latter were the inventors of bronze, which product has played such an important part in the civilization of the Eastern Hemisphere. It has also been demonstrated that the Eskimo are natives of America and differ from the Mongolians, who are brachicephalus, in that the Eskimo are unquestionably the most dolichocephalic of all the peoples of the world. The Eskimo, on being pushed away by other people, spread to the Arctic regions and crossed to Greenland and Northern Asia. This invasion differed entirely from those which might have taken place from Asia to America, and of which there may have been several in the course of all the past ages.

The primitive races of America are represented by the *Eskimo* in the North, the *Botocudos* of Brazil, and the *Tekinicos* and *Pecherais* of *Tierra del Fuego*; their respective languages are unlike those of their immediate neighbors; they have a dolicocephalus cranium. In Europe, the *Bascos* and the *Bereberes* are considered the primitive races; the former believe that they are the descendants of the Iberians, who inhabited a large part of western France and part of Italy. The *Bereberes* of *Marruecos* and *Tunis*, formerly *Berber*, have many things in common with the inhabitants of *Livia*, who in many ways resembled the Iberians. All these peoples have suffered many changes, due to the intermingling with the peoples of contiguous territory, though they yet retain a certain degree of similarity to the native American. The *Bereber*, like the native American Indian, has scanty beard; red skin; black and straight hair; dolicocephalus cranium. The *Berberes* (*Guanches*) also inhabited the *Canaries*, and spoke a language similar to the *Basco*. The *Bascos* resemble the Indian of America in that they both have black, straight hair and a dolicocephalus cranium. The *Fulos* or *Fullahs* of the *Soudan* in *Africa* have also the same complexion and hair of the American Indian.

Columbus claimed that the inhabitants whom he found at

Hispaniola and on the island of Guahamaní resembled the Canarios. Castelnau, noted explorer, says in his book "*Voyage dans l'Amérique du Sud*:" "I have found it an impossibility to examine the beautiful Egyptian paintings in the British Museum, without registering surprise on noticing the striking resemblance of many of the subjects to the Indians of the New World, among whom I have lived for many years. The best artist could not paint a better reproduction of the savages of South America than has been made by these very able masters."

The reputed French geographer, E. Reclus, declares that the Mutugorri, Iberian people or ancestors of the Bascos, were of a reddish complexion. Michelet, celebrated French historian, says that on beholding the Etruscan vases, they reminded him of the Mexican statues of Palenque. The reader will no doubt have noticed that the resemblances described by these eminent men are not a mere accident, but they cause one to ponder and realize that there was a resemblance between the oldest races of the two hemispheres—Oriental and Occidental—and there is one additional proof in the fact that there existed another continent which joined these two—the Arquelensis, which joined Brazil and Africa, or the Atlantida of Platon, which joined Mexico to Berberia and Spain and which was the road used by the Mexicans, who were probably the ancestors of the Bascos, Bereberes, Fulahs and Egyptians.

Platon says in his *Timeus*, that Solon on his trip to Egypt heard one of the priests exclaim: "Oh Solon! Oh Solon! You Greeks are young still. There is not one single old man among you. You accept as facts what are emblematic fables. You only have information as to one Deluge which has been preceded by many. Athens has existed as a civilized community for ages, and has for a very long time been famous in Egypt, for feats which you ignore and the history of which is on record in our archives. There you may secure information as to the antiquity of our nation. There you will learn about the heroic manner in which the

Athenians of old times checked a formidable nation which had established itself over Europe and Asia through an invasion by warriors coming from the Atlantic Sea. This body of water partially surrounded a large tract of land situated opposite the entrance to the Strait called 'Columns of Hercules.' This region was larger than Asia and Libia combined. There was a large number of islands between this land and the Strait. The country, about which I have just spoken, or Atlantida island, was governed by united sovereigns. In one of their expeditions they took possession of Libia as far as Egypt on one side, and on the other they traversed the whole region as far as Tirreni. All our people were at one time slaves, our grandfathers becoming our liberators when their fleet defeated that of the Atlantidos. A short time afterwards their island became submerged, and the region which was larger than Europe and Asia combined disappeared instantaneously." There is a similar tradition in America. "At one time there was in Central America the Empire of Xibalba, governed by two kings, who were Supreme Chiefs of the empire and who had ten other kings under them, each one the ruler of a large kingdom, establishing among themselves a sort of council, which decided matters of common interest. Gradually they extended their dominion over the whole world, but a sudden deluge came and they all disappeared." (Brasseur de Bourbourg, *Histoires de nations civilisées du Mexique et de l'Amérique Centrale.*)

Be this the truth or a mere myth, science considers possible the existence of the Atlantida island, and Paleontology considers it even more necessary in order to explain the emigration of the big mammals from Europe to North America and from South America to Africa,

CHAPTER IX

PRESENT AND FOSSIL FAUNA OF SOUTH AMERICA

The present fauna of South America is characterized by the absence of Proboscides and Hypoides, but such was not the case in ages past, this continent having furnished more ungulates or hoofed-animals with hoof and skull, and also had a large number of Proboscides (animals with prehensile extension of the nose like the elephant) and Hypoides or primitive horse. Eight species of ungulates are known, all of which have disappeared; four of these—the Tillodont, An-cylopoda, Amblypoda, and Condylartha—are found among fossil remains in Europe and North America. A larger variety was found in South America. The sub-orders now extinct, *Protungulata*, *Litopternos*, *Toxodontia* and *Typotheria*, were exclusively South American. In brief—This continent had all the ungulates that ever lived and are yet living in the other continents, thereby proving that *South America was the primitive home of all ungulates, and the center of irradiation* which reached across the Arquelensis, uniting Brazil and Africa, and across the land joining Patagonia and Australia—the Austral Continent, the route taken by the Marsupials, from which the Kangaroo of Australia descends. The Comadreja (Opossum) of the Pampa is the predecessor of the Kangaroo and the oldest of the mammals living today. The gigantic ungulate Amblypodes, primitive South American species, had a bulk and heavy frame like the elephant's, though having much heavier and stronger legs and five toes on each foot. The family of the Astratoperiums developed into a larger species than the elephant, of which we have as an example the *Parastrapotherium*. Several species of the family of the *Protohippus* are known to be the predecessors of the horse today. The

primitive horse had five toes on each foot, the toes gradually disappearing until finally only one remained, that of the present horse. An exhibit in the American Museum of Natural History of New York shows this and other phases in the evolution of the horse. It is known in this museum as *Eohippus* (Aurora horse), and it is stated that it lived 3,000,000 years ago. In North America it inhabited the regions of New Mexico and Wyoming. The *Pyrotherium* compared in size with the elephant of today. It is represented in Africa by the *Moeritherium*, *Palæomastodon*, etc., and in Europe and Asia by the *Mastodon* and *Dinotherium*. The *Pyrotherium* of the Pampa, the ancestor of these species, crossed the *Arquelensis*, which united both continents, just as the *Mastodon* and the *Dinotherium* passed from Europe to North America, over the now submerged continent, which may have been *Atlantida*. On crossing Panama, these two gigantic mammals returned to their mother land, the home of their ancestor, the pampean *Pyrotherium* of the cretaceous era.

In cases where the intermediate evolutionary order of animal life is not to be found in a continent, but its primitive and ulterior forms are discovered, it conclusively proves that the evolution of the preceding species took form in another continent, and also proves that the missing species passed from one to the other continent where its transformation took place, as is the case with the horse, which was not in existence in America at the time of the Spanish exploration; yet, its fossil remains are found in both Americas, but in larger number in South America. There are fifty species of the primitive horse found in America, showing its evolution up to the species of the present day, meaning that the horse originated in America, which fact is attested by the various fossil remains found throughout the vast territory lying between the Argentine Pampa and the State of Nebraska in the United States of America, where all the evolutionary species up to the horse of today are found.

The North American reader, in studying the evolution of

the horse at the Museum of Natural History in New York, will notice the following five principal characteristics:

First—Eohippus, having five toes; second—Protorohippus, with four toes; third—Mesohippus, with three toes; fourth—Protohippus, with three toes (the two lateral toes which formerly touched the ground, having become shorter, no longer touched the ground); fifth—Equus, with only one toe like that of the horse of today. This evolution took place during the tertiary epoch.

The ancestors of the camel are not found in Africa, the home of the present species, but existed in South and North America in form as follows, which are camel fossil remains: *Palauchenia magna*, *Palacoloma Wedelli*, *Palacoloma Oweni*, *Palacoloma Mayor*, etc.

The ancestors of the anthropoid apes (Gorilla, Orang-outang and Chimpanzee) of Asia and Africa, originated in the Pampa and not in Asia and Africa. (Consult Ameghino's "Doctrina y Descubrimientos" Buenos Aires, 1915, and *Paleontologia Argentina*, 1904.—The New York Public Library.)

The *Trigodon* was a species of *Toxodon* much larger than the rhinoceros of today, having an enormous triangular head, a very large horn which protruded from the middle of the forehead, and an exceedingly small brain, making this probably the most stupid of animals.

The *Edentates* include many fossil species of pampean formation, among them the *Megatherium*, which in some cases attained a growth of eight meters in length. The *Mylodon* had its whole body covered with exuding bony pores arranged in the shape of paving-stones. One of these animals, the *Neomylodon*, appears to have lived recently, for there have been found in the caves of Patagonia fresh bones incased in dried meat and hide, with hair intact and in its natural color, which can be seen at the Museum of Buenos Aires and American Museum of Natural History, New York.

The *Macrauchenia* was a species much larger than the horse, neck longer than that of the giraffe, very long legs,

three toes on each foot like the tapir's, with a trunk like that of the elephant.

Certain animals appeared during the Pliocene epoch, which are not of South American origin. There are several strange forms, like the Felinos, and among them the Smilodon, a tiger much more formidable than the African lion, and with unusually large saw-like canine-teeth; gigantic bears as large as oxen; mastodons, some of African origin and some American. These migrations have taken place alternately and reciprocally between South America and the other continents, as may have happened in the case of primitive man. At the same time these migrations explain the changes of fauna of the various continents. Thus, the Toxodon of the Pampa reached Nicaragua; the Gliptodon reached Anahuac in Mexico, near the site of the Mexican capital, and as far as the States of Texas and New Mexico in the United States; the Carpincho of Uruguay and Paraná traveled as far as Florida; the Megatherium and Milodonns, which had become extinct in the Pampa, are found in the States of California and Carolina and in places along the Mississippi valley.

No fossil apes are found on tertiary soil of North America, and the present species in Mexico and Central America are South American types; in Europe and Asia, fossil apes of the Miocene epoch have recently appeared, but they had already been discovered on Patagonian tertiary soil (*Homunculus* of Santa Cruz) the skull of which very closely resembles that of man. Of all species of apes inhabiting the Old World, none has its predecessors in the same continent, which leads scientists to believe that they are descendants of the fossil species found in South America, which continent they inhabited in the very remote past. The *Homunculus* of Santa Cruz combines a larger number of characteristics common to man than any other of the apes, and it appears to be the primitive trunk from which the American species became separated from the anthropomorphus of Asia and Africa, and the hominideos. The belief that the

Pampa was the primitive home of man is further confirmed by the fact that among the fossil remains found, there are two toxodons of the tertiary epoch—one with a spear point imbedded in the trunk, between the ribs, and another with an arrowhead through the bones of the leg. These indications of the existence of the man of the tertiary age, which came to light during the years 1917 and 1918, confirm the opinion of the late (died in 1911) naturalist, Ameghino, who found traces of the tertiary man of the Pampa.

According to this Argentine naturalist, the homunculus types, natives of South America, crossed to the Old World towards the end of the Eocene or at the beginning of the Oligocene epoch, over the remaining part of the Arquelensis, which, as we have stated, united South America and Africa. This is proven by the discovery of small fossil anthropoids at the oligocene period of Northern Africa, as was foretold by Ameghino. There the species retrograded instead of advancing, giving place to the fossil and present anthropoids of Europe, Asia and Africa.

The man of South America (*homo pampaeus*) invaded North America during the same period as the mammoths—*Megatherium*, *Milodon*, *Toxodon* and *Gliptodon*—of the Argentine pampas. These perished, but man separated into two branches, one invading the Northwest and the Asiatic continent, and the other going in a northeasterly direction, crossed the continental bridge, which at the beginning of the quaternary epoch connected Canada and Europe, penetrated the latter continent through the west and gave origin to the man of Neanderthal, of Spy, and la Chapelle aux Saintes, now extinct species. Other groups gradually occupied Europe, and through evolution came the transformation into the Caucasian. Ameghino in his book, "*Doctrina y Descubrimientos*," says: "I consider it an impossibility for any of the species of the apes of today to evolve into man, inasmuch as their evolutionary process has taken a divergent course which at each step separates them farther from man. All the fossil apes so far discovered in the Old World

belong to these diverging and retrograding branches. The same applies not only to the renowned Pitecantropo of Java, but also to the man of Neanderthal, both of which would represent extinct divergent lines which have become separated from the central trunk, during a comparatively recent period. The anthropomorphic apes are, in the opinion of Ameghino, our degenerated or retrograded brothers and not our first cousins, as Darwin believed.

Such is Ameghino's opinion regarding the races of mankind, and which opinion more closely coincides with the information that is being gathered through the natural sciences. We mentioned in chapter II the principal fossil remains of the Pampa.

THE MAN OF CHAPALMALAL—FULL SANCTION

"The Congress of Natural Sciences which met recently in Tucumán, and in which all the eminent scientists in our country, both national and foreign, took part, has just given recognition by unanimous vote to the authenticity of the weapons, instruments and fossil remains found by Dr. Carlos Ameghino at Chapalmalal, and which were presented by him as an attestation of the existence of man during the remote prehistoric ages."

The Congress which has recognized this authenticity as well as that the objects were found in their proper place, and that they were made and in use during that geological era to which belong the animal fossil remains that have also been found—backbone and femur of the *Toxodon*, both with incrustated quartz points of arrow and spear—thus gives the fullest sanction that may be desired by our country (with representation of the foreign scientific element) to the fruitful labor and self-evident scientific knowledge of Dr. Carlos Ameghino, Director of the Paleontological and Anthropological departments of our museum.

"The matters herein referred to, received the special attention of the Congress, which on terminating its labors at one of the sessions, gave a vote of thanks to the erudite Paleon-

tologist. Therefore, the last investigations made at Miramar and Chapalmalal, together with the proof of the existence of man during that geological epoch, have been recognized."

"These facts had been formerly recognized by the commission appointed by Dr. Angel Gallardo as Director of the National Museum of Natural History, and by Dr. Joaquín V. González, Rector of the La Plata University. The members of this commission were: Dr. Santiago Roth, Director of Mines and Geology of the Province of Buenos Aires and Instructor of Paleontology; Dr. Walter Schiller, Instructor of Mineralogy and collaborator in the management of Mines and Geology of the country; Moises Kantor, Instructor Engineer; Dr. Lutz Witte, Geologist of the mines within the province; Dr. Luis Maria Torres; Dr. Carlos Ameghino."

"This commission after a careful study, drew up an affidavit which has been published in Spanish and in French, enumerating the articles found and asserting that 'The ocular inspection of the site where the above handiwork is found does not show any indication which would lead any one to suppose that the articles described were buried at a period subsequent to the formation of the covering layer; that they were in proper position and were therefore considered objects of human handicraft, contemporary to the geological stratum where they were deposited.'"

"Taking in consideration," adds the affidavit, "all the circumstances surrounding these discoveries, as well as the condition of the objects and the relative stratification of the layers, the commission opines that the objects in question show traces of the hand of man who lived during the geological epoch corresponding to the Chapalmalense stratum."

"This closing declaration of the said scientific authorities was afterwards adopted by another commission later appointed, and is now corroborated by the significative sanction of the Congress of Natural Sciences."

"Thus, scientific evidence asserts itself and leaves those who would fain deny it in a lamentable state."

Published in "La Nacion" (principal Argentine daily) of Buenos Aires, issue of Dec. 15, 1916, regarding the deliberations of the Tucumán Scientific Congress, which met a few days before.

EXTRAORDINARY FISH WEALTH OF LA PLATA

Montevideo has, since the colonial epoch, been famous throughout the civilized world for its extraordinary wealth and variety of fishes, such as will satisfy the most exacting taste. Its supply by far exceeds that of most of the seaport towns of Europe, not excluding England, Holland and other countries of northern Europe.

It is difficult to find better edible fish than the *pescadilla de red*, *brotula*, *pejerrey*, *anchoa*, *corbina*, *sargo*, etc., and other varieties which abound in Montevideo, Maldonado, and all along the coast of the Atlantic. Several of these species come from South Atlantic waters as they migrate north, seeking a warmer climate during the winter season, hatching their eggs in the estuary of La Plata, where they find in the sediment brought down by the waters of the Paraná and Paraguay, an abundant supply of vegetable food or phytoplankton in the form of microscopic seaweed, which makes an excellent fish food. In Canada it is the sea-coralline wrack that attracts the codfish of Terranova. The zooplankton must necessarily be very abundant, inasmuch as it is formed by microscopic animals like the foraminiferes, nocticules, radiolares, etc., which abound in temperate waters. Our book in Zoology, published in 1894, states that certain species migrated, among them, the anchovy, which is found near Montevideo only during the Autumn and Winter. The immigrating species are still unknown, as the Institute on Fishes, founded a few years ago, has not made a complete study of them as yet. The French naturalist, A. Bouyat, has included in his book, "Les Pecheries de la Cote d'Afrique" (Challamel editeur, Paris, 1908), the life of the fishes of the Atlantic. The said author, who is instructor of Zoology in the Institute of Agriculture in Monte-

video, says in his book, "Contribution al etude de la peche maritime en Uruguay," that the abundance of sardines during certain epochs seems to indicate that the coast is frequently visited by shoals of sardines, and that a complete study as to their migrating habits should be made. The author of this book lives near the seashore of Montevideo, and it has been his observation as well as that of the fishermen of that region, that there are certain periods of the year when large schools of fish come from the South Pole as far as the estuary of La Plata. Many species, such as the pejerrey and the boga, find their way during the winter months into the Paraná and Uruguay and their tributaries. The supply of fish in Montevideo is sufficiently large for home consumption and for exportation to the Buenos Aires markets, large quantities being carried by all the night steamers that leave Montevideo for the Argentine capital. The fish bureau, under the direction of Don Juan Nelson Wismer, a North American expert, sells the highest grade fish on the street markets at six cents per kilo (less than three cents per pound). During certain days of the summer season, the fish caught in nets reach such vast proportions that it sells at the rate of twenty liters for one-half of a peso (approx. a five gal. measure for about fifty cents) at the Pocitos of Montevideo.

Bouyat says in his book, which we have already mentioned :

First—Fish is very abundant on the Uruguayan coasts.

Second—The edible species are abundant enough to make the fish industry a profitable occupation under wise management.

Third—The demand for fresh fish, due to the proximity of the cities of Buenos Aires and Montevideo, makes it even more attractive from a commercial standpoint.

Fourth—The conditions, which will be found for the future exploitation of the industry, are to a great extent superior to those to which all foreign enterprises will have to be subject in both the old and the new continents. In fact, the

field of operations—the La Plata River—which is a veritable sea at Montevideo, is at just a few hours' ride from the center of consumption. The fishing boats, in case of storms, have adequate shelter at Montevideo and Maldonado, and while on duty at night have the advantage* of splendidly lighted coast line, which receives its illumination from the light-houses of Polonio, Santa Maria, José Ignacio, Punta del Este, Islas de Lobos y Flores, Banco Inglés, and Punta Brava.

A refrigerator has been recently constructed at the port of Montevideo, in order to facilitate exportation to the interior of the country. The city of Buenos Aires itself has developed a profitable fishing industry and brings great quantities of fish from Mar del Plata, a southern port, and from the lakes of Chascomus. Montevideo exports from twenty to thirty million kilos of fresh fish annually. There are plants in Montevideo and Maldonado for the preparation of canned and salt fish, which is intended for shipment to points in the interior.

The Uruguay, the Paraná and their tributaries have big fish such as the surubì, pacù, patí, manguruyù, etc., which average as much as 40 to 60 kilos in weight each, delicious eating and quite well adapted for canning purposes. The Liebig plant of Fray Bentos, a port of the Uruguay, manufactures fish oil for its own machinery and for export purposes. Schools of big fish are constant visitors at this port.

There is no ostricultural plant at any point on the La Plata. It is the opinion of many that a profitable business could be developed by some North American concern which would establish in Montevideo an oyster-farm on a big scale, with two cities of a combined population of more than two million inhabitants to feed.

The 20 to 30 million kilos of fish that Montevideo exports should be increased to 80 or 100 million for consumption in Buenos Aires and the rest of the Argentine Republic, which, having no inland streams, the only fish to be had is from the lake Chascomus and others of the province of Buenos Aires.

The Neuquen and other streams of Patagonia have fish hatcheries (salmon, trout, etc.) for fish imported from the United States, but the great distance to the Buenos Aires market and the competition with the La Plata fish industry right at the door of the consumer make the former a more risky enterprise.

The wealth represented by the fish industry of the principal fish markets of the world is represented by the statistical figures of 1910 as given below, according to the International Council's report on activities on the sea:

YEAR 1910		
COUNTRY	Million Kilos	Value— Million Dollars
England.....	666	38
Norway.....	629	12
Scotland.....	442	14
France.....	230	22
Germany.....	166	8
Holland.....	137	8
Iceland.....	78	2
Sweden.....	119	..
Ireland.....	52	..
United States America.....	...	70

See the synopsis of the species of vertebrates, copied from L. C. Bollo "*Nociones de Zoologia*" (published in Montevideo, in 1890, in five volumes with 540 illustrations, at Libreria Nacional de Barreiros y Ramos).

SYNOPSIS SOUTH AMERICAN FAUNA

ORDER	SPECIES	NATIVE COUNTRY
MAMMALIA—MAMMIFEROUS		
I. SIMIÆ	Alouatta Caraya, Howler.	Brazil, Paraguay and
SIMIA	Aotus Miriquiná, Spider Simia.	tropical region
	Callichis leucocephala, Tití argentinus.	"
II. PROXIMILÆ (Not)	Vampire, Gray Bat	"
III. CHEIROPTERA		
IV. CARNIVORA	Ursus, Bear, two species, Maopelada and Coati.	"
CARNIVOROUS	Felidæ, four species, pampeano Cat.	"
	Puma (lion), Jaguar (tiger), Ocelote.	"
	Canis, Dogs, two species, Dog magellanicus, Aguará or Canis Azaræ.	Tropical Zone
	Ferret, Conepatus suffocans or Zorrillo.	"
V. PINNIPEDA	Phoca, three species, Elephant marine, Wolf marine, Otaria byronia.	Atlantic
PHOCA		
VI. INSECTIVOROUS	Fault	
VII. RODENTIA	Carpincho or Capibará, Apereá, Vizcachia pampeana.	Plata
RODENS	Chinchilla	Andes
	Cleomys magellanicus or Tucutucu, Nutria or Myocastor Coypus.	South America
	Dasyprocta Azarai or Aguti, Rabbit, Hare, Dolichotis or Patagonian Hare.	Plata
VIII. PROBOSCIDEA	Fault	
ELEPHANT		
IX. PARIDIGITATUS	Dicotyles Pecari.	Tropical Zone
PAR-FINGERS		"
X. IMPARDIGITATUS	Tapir or Danta	"
UNEQUAL FINGERS	Horse, Ox, Sheep (Importe)	"
	Five species Camels:	
	Hippocamelus bisulcus Chilian (Huemul).	Andes
	Llama (Lama, glama glama)	"
	Guanaco (Lama glama huanacus)	"
	Alpaca (Lama glama pacos)	"
	Vicuña (Lama glama vicugna)	"
XI. EDENTATA	Two species Deer	Tropical Zone
EDENTATES	Seven species Tatus—Tatú, Muñita, Pichiciego, Mataco	Argentina
	Guirquincho bola, Feludo, Tatu carreta	"
	Tamandua, Ant-Bear	Tropical Zone
	Perezoso (Sloth)	"
	Two species Didelphys: Comadreja picaza and red	"
XII. MARSUPIALA		
MARSUPIAL	Fault	
XIII. MONOTREMATA	Whale, Dolphin or Tonina, Orca magellanica (Spade-Fish), Manatí.	Atlantic and Pacific
XIV. CETACEA		

ORDER	SPECIES	NATIVE COUNTRY
BIRDS		
I. CURSORES.	American Rhea or Nandú.	Plata
II. RAPTATORES.	Falcon, Eagle, Carancho, Chimango, Gavilan.	South America
III. RAPAZ	Vulture, three species: Sarcotamphus gryphus or Condor, King-Vulture or Sarcotamphus papa, Urubú.	"
IV. PASSERES	Owl, three species: Nacurutú, Cabure, Lechuza viscachera.	Argentine
SMALLER BIRDS		
(a) <i>Dentirostres</i> .	<i>Tolt-Peak</i> —Mimus modulator or Calandria,—Zorzal blanco, Zorzal rojo, Zorzal negro, Pitangus sulphuratus or Benteveo, Churrinche, Tijereta, Ratona, Seven colores—Urucá Platense azul, Boyero or Cartle-drive.	Tropical Zone and Sub-tropical
(b) <i>Conirostres</i> .	<i>Cone-peak</i> —Federal, Jilguero, Cardenal, two species: red and yellow, Chingolo Misto.	"
(c) <i>Fisirostres</i> .	<i>Fisside-peak</i> —Golondrina Urubú.	"
(d) <i>Tenuirostres</i> .	<i>Slend-peak</i> —Hornero or Baker, Colibri, Picañor, Tente, Martinpescador or Fisher-bird (3 species).	"
IV. GALLINACEI.	Pigeon, five species Torcaz, Hoco.	Tropical and Sub-tropical
GALLINACEOUS.	Two species Partridge.	tropical
V. ZANCTIDAS.	Chajá, Teruteru, Chuña, Batitú, Becasina, Gallereta, Chorlo.	Tropical and Sub-tropical
VI. LONG-SHANKED		
NATATOIRES.	Pampero, Albatross, White-heron, Stork, Sea-gull, Pelican, Cormorant, Alcatraz, Swan, five species Ducks, Flemish, Penguin, Manco Child-Bird.	Atlantic and Pacific
REPTILIA—REPTILES		
I. CHELONIA.	Elephant turtle.	Pacific
CHELONIANS	Platense turtle.	Plata
	Hidromedusa, Matamata.	Brazil
	Carey.	Atlantic and Pacific
II. CROCODYLID.	Yacaré, Caíman, Tejú, Lizard.	"
CROCODILE	Agamo, Iguana, Basilisk, Gecko, Anfisbena.	"
III. OPHIDIA.	Crotalus terrificus, Lachesis alternatus or Cross viper, Coral serpens, Lampalagua or Boa Constrictor, species various snake.	"
AMPHIBIA—AMPHIBIOUS		
I. ANURA.	Giant toad, Bufo.	Tropical
II. URODELA.	Frog, Ceratofris Boje, Guayane Pipe or Cururú.	"
III. APODA.	Cecilia lombricoide.	"

ORDER	SPECIES	NATIVE COUNTRY
PICIS—FISH		
DIPNOI.....	<i>Lepidosirenide</i>	Amazonas
DIPNOICUS	Lepidosireno.....	"
SELACI	Squalus acanthias = Shark—Tiburón.....	Atlantic-Pacific
SELACIOS	Galeus canis = Dogfish—Cazon.....	"
	Raya Platana = Skate—Raya—Chucho.....	Amazonas, Orinoco
	Gymnotus electricus.....	Atlantic-Pacific
TELEOSTEI.....	<i>Leptobotranchia</i> Hippocampus guttulatus—Small horse.....	"
	Congrio, Anguila.....	"
	Clupea Laderensis = Herring—Arenque.....	"
FRYOSTOMI.....	Clupea pectinata = Lacha.....	"
	Stelophonus olidus = Anchovy—Anchoita.....	"
	Lycengraulis grossidens = Sardine—Sardina.....	"
	Salminus platensis = Gildin—Dorado.....	River Plata, Uruguay
	Rheoboides bonerensis = Dentado.....	and Paraná
	Myletes duriventris = Paquí.....	"
	Miletes Mitrei = Paquí.....	"
	Macrondon malabaricus = Tararira.....	"
	Leporinus obtusidens = Boga.....	"
	Prochilodus platensis = Sabalo.....	"
SILURIDÆ.....	Pimelodus maculatus = Bagreamarillo.....	"
SILURIDOS	Pimelodus albicans = Bagre blanco.....	"
	Pseudopimelodus zingaro = Manguruyú.....	"
	Pseudopimelodystoma coruscan = Zurubi.....	"
		Very fine fish—Montevideo and Buenos Aires
ANACANTHINI.....	Hippoglossina notata = Sole—Lenguado.....	"
ANACANTINOS	Paralichthys brasiliensis = Sole—Lenguado.....	"
	Phycis brasiliensis = Brócula.....	"
	Acantopteros paragonica = Mero.....	"
	Micropteron undulatus = Corvina.....	"
	Cynocion striatus = Pescadilla.....	"
	Sagenichthys ancylozona = Pescadilladered.....	"
	Pogonias chronis = Corvina negra.....	"
	Sparus pagrus = Pargo colorado.....	"
	Atherinichthys platensis = Pejerrey del Plata.....	"
	Atherinichthys bonacrensis = Pejerrey de aguadulce.....	"
	Percichthys = Trucha argentina.....	"
	Parona signata = Palometa de mar.....	"
	Sarda sarda = Bonito.....	"
	Mugil platanus = Lisa.....	"

CHAPTER X

DEMOGRAPHY

SUMMARY

Composition of the Present Population of South America—Demographic Coefficients Compared—Alcoholism, factor in the Mortality rate—Growth of the Large Cities of South America.

COMPOSITION OF THE PRESENT POPULATION OF SOUTH AMERICA

The population of South America as a whole, represents the issue of the crossing of the Spanish and Portuguese with the Aborigines. The purity of the indigenous race being now found only in isolated districts of the Andean mountains and on the plains drained by the Amazon, Paraguay and Paraná. Peru and Bolivia have a preponderance of indigenous population, the workingmen in the mines and on the farms being Indians and Mestizos. The same thing is true of Paraguay and Central Brazil where the Guaraní Indian that makes up the bulk of the working population retains his racial purity. The Indian and the Mestizo of Chile, Bolivia, Peru and other countries of the Andean region has by nature great physical strength and endurance, and the added fact that he is thoroughly acclimated and is more frugal in his habits, makes him a more competent worker in the mines than the European.

Brazil had for centuries imported negroes from Africa for work in the fields, agriculture being at that time its main industry, but slavery was finally abolished without having to resort to a conflict such as the war of secession, which caused so much bitterness and sorrow in the United States of America. The population in general represents a mix-

ture of Indians of the Guaranies family, negroes and Europeans. During the last few years the European element has increased considerably, particularly among the Germans and Italians, the latter settling at San Paulo, Minas and Rio de Janeiro, and the former at Rio Grande, Santa Catalina, Paraná and other places farther south. The German immigrants and their descendants who have been educated under Germanic methods, hoped and expected to see Germany triumphant in the world's greatest war, and planned to secede from Brazil and form a separate state under the dominion of the empire.

The Portuguese population held first place until 1873, when it ceded to the Italian which now constitutes half of the foreign population. Brazil has more than two and one-half million foreigners out of a total of 24,000,000, or 10 per cent of the whole. Argentina, according to the census of 1914, had 2,358,000 foreigners, of whom there were 1,470,000 men and 884,000 women, or a total population of 7,885,000, the foreign element therefore representing 30 per cent of the population. Buenos Aires, the capital, showed still a larger proportion, for out of a total of 1,575,000 there were 777,000 foreigners, almost an even 50 per cent. In 1916, the foreign element of Argentina was divided as follows: Italians, 929,000; Spaniards, 829,000; Russians, 93,000; French, 79,000; English, 27,000; Germans, 26,000; Austria-Hungarians, 38,000; Turks, 64,000; Swiss, 14,000, as per data furnished by "La Nación" of Buenos Aires, January 1, 1917.

The Italians, who hold first place, are the most thorough and efficient agriculturists, excepting the "golondrina" immigrants, who go to the La Plata to engage specially in agricultural pursuits during the farming season, returning to Italy in April or May. Next to the Italians, the Spaniards represent the largest number of any one nationality, in fact they have been the only immigrants that South America has had in recent years.

The Oriental Republic of Uruguay, with one and one-half

million inhabitants, has 250,000 foreigners, among whom the Italians and Spaniards are in the majority. There are no Indians in this republic as in the other countries of South America, not excluding Argentina, which has many in the Patagonia region and on the Chaco, the two northern and southern extremities of the country.

In Montevideo, the majority of the inhabitants are foreigners, but in the country the native or creole element is on the ascendancy. The creoles are descendants of the Spaniards and Italians principally, with a very small percentage of Charrua blood among the gauchos. The latter are a healthy and strong people, and as a rule superior in intelligence to the European peasants who come to the La Plata, and can adapt themselves to all kinds of labor. The disappearance of the Indian from the Uruguayan republic is due to the fact that this region was the main battle ground during the wars waged by the natives against the Spaniards, Portuguese and Brazilians during the eight years of struggle that Montevideo suffered at the hands of the tyrant Rosas, at that time dictator of Buenos Aires, as well as to the many civil wars which had taken place within the republic from time to time. His passion for war, linked with his love for freedom, were the fundamental causes of his disappearance. In 1830, there yet remained a large Indian population, numbering thousands, in the northern part of Uruguay. They engaged in battle with the army of Montevideo. General Rivera (Don Bernabé), who was considered one of the most brilliant militarists of the age, was killed. The Indians, after being defeated, scattered throughout the whole country, finally settling among the whites, and a new nation of vigorous and intelligent men was born—the *Gauchos*.

DEMOGRAPHIC COEFFICIENTS COMPARED

Vegetative growth, or the difference between births and deaths, is the essential force of young nations because it is

the principal factor in their growth. Immigration is another contributing factor, but this is not continuous, for there are periods, as for instance, that between the years 1914 and 1919, when this contributing factor is suspended. The countries of South America mostly favored by nature for the increase of the population are Argentina and Uruguay, for reason of their exceptionally healthful climate, their abundance of food products and their absence of epidemic (smallpox, typhus, diphtheria, malaria fever, etc.) as the result of adequate hygienic measures. According to data secured through the Demographic Bureau of Uruguay, founded by L. C. Bollo, the vegetative growth of the following countries is given on a basis of 1,000 inhabitants: Republic of Uruguay, 22; Argentina, 21; England, 13; Germany, 12; Austria, 7; Italy, 7; Chile, 6.

Brazil was dreaded by the immigrants who were kept away by the terrible diseases to which the country was subject. The mortality rate of Santos, Rio de Janeiro and other ports had reached an alarming figure. Under the American methods of hygiene of today, the yellow fever has completely disappeared.

The Oriental Republic of Uruguay, with less than half the population of Chile, shows a higher rate of increase. Chile has 30 deaths to every 36 births per 1,000 inhabitants, or a vegetative growth of 6 per 1,000, while Uruguay has a growth of 22, almost four times as much as Chile. Its birth rate is higher than the latter and its mortality rate less than half of its birth rate. Besides, the republic of Chile has little or no immigration. It would be interesting to present the demographic data of other countries, but though many may have an established civil registry, they have no complete demographic statistics. But it is a well-known fact that the rest of the South American countries where the indigenes are in the majority, pay little attention to hygiene and the consequence is that they are decimated by typhus, tuberculosis, small-pox, diphtheria, syphilis and other dreadful contagious diseases. The Republic of Uruguay has di-

rected the passage of a law compelling the construction of a modern sewerage system in all towns or villages of over 10,000 population. This work of construction is under the direction of the well-known American firm—Ulien of Washington.

ALCOHOLISM FACTOR IN THE MORTALITY RATE

Alcoholism, a world-wide evil, is, next to tuberculosis, the biggest factor in the increase of the mortality rate. According to Mr. Fernet, 10 per cent of the mortality of Paris is due to alcoholism, and according to Dr. Salterain of Montevideo, 5 per cent of the mortality of the latter city may be attributed to the same cause, which is low in comparison to what it is in other parts of the world, as will be seen by the figures below, which appear in Dr. Salterain's book entitled "Sobre el Alcoholismo." The author of the said book is a highly intellectual Uruguayan physician and one of the leading anti-alcohol propagandists of the First Anti-alcoholic Congress held in Montevideo in 1918.

Number of liters of pure alcohol per inhabitant consumed annually in the form of whiskey, beer, wine, etc. Annual average from 1891 to 1895 inclusive:

	Liters		Liters
France.....	15.83	Roumania.....	9.74
Belgium.....	12.58	Germany.....	9.25
Spain.....	12.05	British Isles.....	8.17
Denmark.....	10.87	Austria-Hungary.....	7.99
Switzerland.....	10.73	Uruguay.....	5.30
Italy.....	10.30	Russia.....	5.21
Portugal.....	10.10	Sweden.....	4.43
Central Europe.....	10.39		

It will be noticed that in Spain, Italy and Portugal, though showing a high rate, not many drunkards are found, due to the fact that they consume mostly wines to the exclusion of the stronger alcoholic drinks like absinth, whiskey, gin, cognac, etc.

According to notes by Dr. Etchepare, physician at the hospital for the insane (Asylum of Montevideo), 21 per cent of the mentally deranged owe their condition to alcoholism.

We have no exact data regarding this matter on the other countries of South America, but it is widely known that Chile and a few other countries show a high rate of alcoholic consumption. The mortality rate of 30 per 1,000 inhabitants in Chile is largely due to alcoholism, while Uruguay, which shows a small percentage of alcohol consumed, has a mortality rate of less than 15 per 1,000. It is in countries showing a constantly increasing mortality rate where dry laws should be enacted, something that would be almost impossible in Chile, as the biggest land-owners whose large vineyards represent a great deal of their wealth, would consider themselves bankrupt the moment that any law prohibited the use of wine and *chicha*. These same land-owners now control and sit in Parliament to draft the laws of the country. It is essential, in order that nations may sweep away all obstacles which obstruct their progress, to first eliminate from all law-making bodies, the commercial strategists who enact laws for their own exclusive benefit and with no thought of public health or morals. If the welfare of mankind demands that no vineyards be planted because the wine and *chicha* therefrom are detrimental to the health of the individual, then why not plant apple, pear and peach trees, which fruits have a sure market everywhere?

The wealthy land-holders of South America should not lose sight of the fact that the condition of the working people of the rural districts is bad, that it has to be improved, and if this is not done they will be laying the foundation for Bolshevism, and conditions then carried to the other extreme causing the suppression of private property. Experiments are being made in Chile in connection with the preparation of raisins so that the exportation of grapes in a dried form may be made easy, as is done in Spain. In Uruguay and in Argentina the workers in the fields use the infusion of "mate" leaves (*ilex-paraguayensis*) and no alcohol. The workingman believes that cold water drinking during fatigue produces discomfort and sickness at times, and so whenever he can procure mate he will not drink

alcohol. This infusion is very healthful and even nutritious, has a smaller quantity of the alkaloids found in coffee and tea and is very economical.

The power of nations is not based on the number of its inhabitants, but on the race which forms the kernel of its population. One million white men are worth far more to a nation than five or six million Indians or creoles, the cross between the Indian and the European. Thus, Uruguay stands as the first among the countries of South America in the evolution of modern ideas. It was the first to establish the secularization of cemeteries formerly in the hands of the Catholic church, as well as equality of civil rights among foreigners and natives (1869); the first to establish laical compulsory education (1879), compulsory registration and civil marriages (1879), absolute divorce (1908), absolute separation of church and state, and absolute religious liberty (1918) embodied in the new constitutions, also proportional representation and a collegiate government wherein the functions of the Executive are divided between the President of the Republic and an Administrative Board of nine members. It is a form of transition between the collegiate government of Switzerland and the presidential system of the other republics of America.

GROWTH OF LARGE CITIES

No other countries in South America show as large an increase in population as Argentina and Uruguay. The latter country's steady and rapid growth is shown by the following figures:

URUGUAY	
Year	Population
1796.....	30,000
1829.....	74,000
1852.....	131,000
1860.....	227,000
1873.....	450,000
1895.....	822,000
1919.....	1,500,000

The City of Buenos Aires, the capital of Argentina, shows also a wonderful gradual increase as follows:

BUENOS AIRES	
Year	Population
1801.....	40,000
1822.....	55,000
1852.....	76,000
1869.....	117,000
1889.....	523,000
1919.....	1,600,000

Next to Buenos Aires, Montevideo shows a more rapid growth than any other South American city, and the figures below are self-explanatory:

MONTEVIDEO	
Year	Population
1803.....	4,700
1813.....	13,000
1852.....	33,000
1860.....	57,000
1884.....	164,000
1889.....	216,000
1919.....	450,000

Montevideo's population is approximately one-third that of the whole country (Uruguay), while Buenos Aires has about one-fifth of the population of Argentina. It must be borne in mind that Montevideo is the capital and commercial center of a country, the area of which is only about 200,000 square kilometers, and Buenos Aires is the capital of a country covering 3,000,000 square kilometers.

Brazil has several important cities which show a large increase in population during the last few years, particularly Rio de Janeiro and San Paulo, the latter having grown from 250,000 in 1890, to more than 400,000 in 1919.

The city of Montevideo, besides having the advantageous commercial position at the entrance of the La Plata estuary and at the same time being on the route of steamers bound for the Pacific via the Strait of Magellan, has a specially attractive seashore, inasmuch as the improperly named Rio de la Plata does not reach Montevideo, which is on a gulf formed by the Atlantic, as its salty and clear waters indi-

cate. A large number of raisers of live-stock in Brazil, with business interests in the state of Rio Grande, make their home in Montevideo, and many others come from different parts of Brazil to enjoy the many advantages which the beaches of Montevideo afford the pleasure-seeker. Its thoroughly modern and luxurious hotels compare with the best in the world. The "Casino del Parque," on the seashore, is as sumptuous as that of Monte Carlo, and with its roulette and other games contributes more than a million dollars annually to the municipality, a large part being used for charity purposes. Another very attractive Casino at a short distance from the city on the Carrasco beach resembles that of Ostend. This Casino, which cost \$2,000,000 to construct, compares with the best in Europe. Montevideo also entertains large numbers of tourists from Buenos Aires, where they have very warm summers. The large influx of tourists into Montevideo during the summer season is also largely due to the excellent accommodations offered by the comfortable steamers which cross the estuary of La Plata during the night between the hours of 10:00 p. m. and 6:00 a. m. The steamship lines, which have service along the Uruguay, permit the inhabitants of Paraguay and those of the eastern Argentine region, to change to Montevideo without any difficulty or inconvenience, while at the same time the Brazil trains bring large numbers of Brazilians who regularly spend their summers at the beaches of Montevideo, properly called the "Ostend" of South America.

CHAPTER XI

POLITICAL ORGANIZATION OF THE VARIOUS SOUTH AMERICAN STATES

Following the independence of the several South American States which comprised Spanish America, came the disordered conditions which are a natural result in newly formed nations born to independence without a previously acquired political education. Consequently there were revolutions after revolutions in all the different states until they secured a definite organization. The Europeans above all, have disdainfully looked upon these states which have lived in almost constant strife, the Europeans failing to understand the spirit of justice which has been the prime instigator of the revolutionary convulsions among the South American populace, who have revolted from time to time against the powers which have been guilty of tyrannical acts and which have violated the rights of the citizens, contrary to what their respective state constitutions prescribe.

A fraudulent election, or a violation of the rights of the citizens, in some form or another, has nearly always served as the spark that has kindled the revolutions. The Europeans cannot understand the pride of the South Americans, for the very simple reason that the former have been born and reared in a servile school, a political school which trains the individual to look upon his king or emperor, and the powerful military government with its imposing army, as an almost divine, superhuman entity.

The Parliaments of nearly all of the European nations may be anything but the result of regularly conducted elections by the people in selecting the most honest, impartial and patriotic of their citizens to serve in what should be a

representative body. Instead, they are composed of the most servile individuals whom the governing authorities can possibly find, and who receive from the same authorities the support of the official element in order to be sure of winning the elections. The government respects no scruples in publicly recommending the official candidates.

The traveler, visiting the various European countries, cannot but feel surprised at the almost unbelievable blind obedience of the masses, not necessarily to the laws enacted in Parliament, but to the most trifling of police regulations and the whims of minor authorities. *Obedy is the watchword, obey in silence and without protest.* Such was the government of Germany, Austria and other European nations.

The unfairness of the accumulated vote, entitling each citizen to as many as three votes, elections by cities, which for reason of this or the other special privilege of nationality can elect a certain number of deputies when some other larger and more important city elects just one-half of the number, and many other similar unjust regulations have been in vogue in Austria and Germany, these regulations having been tacitly tolerated by the so-called citizens. Any of these extreme violations would have been the cause of an armed revolution in South America.

We will not deny that many revolutions have not been altogether justified, but it is more worthy of the man to revolt against injustice even though the faults of governments be exaggerated, *than to maintain an attitude of abject servility which is characteristic of the European, with but a few exceptions.*

When Carlos V assumed the control of Spain in 1519, he destroyed the power of the Cabildos, representative bodies of national sovereignty, and when subsequent Indian legislation reduced the powers of these institutions to a complete nullity by surrendering everything to the absolute and arbitrary system of the king's central government, Spanish liberty ceased to exist, as did the party of the Comuneros of Castilla under Don Juan de Padilla and his followers, who

fought so nobly in defense of independence and freedom, and against the imperial and germanic system of him who displayed the double diadem of King of Spain and Emperor of Germany.

It is true that on certain important occasions, the Open Cabildos of America were the people's tribunals, but these assemblies, where each and every citizen had the privilege of being heard, met in session but few times.

It may be said that since the revolution of the party of the Comuneros of Castilla, Carlos V, Felipe II and the other kings governed South American possessions through their viceroy just as they pleased, excepting a few times when the people of the American colonies rose up in protest and succeeded in securing an audience.

And so Spanish America was under an arbitrary form of government inspired by what personally suited the king and his delegates, as it is a well established fact that the South American colonies did not belong to Spain but were the exclusive property of the king. We read in the book entitled "Memorias Sobre la Influencia Social de la Conquista Colonial de los Españoles en Chile" (Treatise on the Influence of Spanish Colonial Conquest on Chilean Society), by the eminent Chilean writer Lastarria, the following: "The Cabildos of the Chilean part of the population had no other sphere of action than the jurisdiction intrusted to the Town Mayors and the police powers conferred upon the councilmen in such cases as the law prescribed, or on the will of the official governing the colony in the name and as representative of the monarch. This institution was therefore of no benefit to the people; on the contrary, it favored and was devoted to the throne on which its existence depended. It was in fact, though of secondary importance, an instrument of the will of the king and his individual interests. We can therefore establish beyond a doubt the fact that *the despotic monarchy in all its deformity and with all its vices was the political form of government from which our society sprang and developed*, for such was its constitution and its

mode of being during all of the colonial era. This political form of government spread its corrupting influence in our society all the more energetically for the reason that to this system alone was reserved the right to create, inspire and direct our habits, and further, that it was supported by the religious power with which it formed a confederacy on which was founded the theoretic omnipotent despotism that conquers all."

The Cabildo of Buenos Aires consisted of twelve members, four of whom were life appointees, and the balance for a certain specified number of years. In smaller cities the Cabildos had from six to twelve members according to their importance, besides exercising duties in the administration of justice, such as Mayor Ordinary, Judge of Festivals, Police Judge, Prosecutor, Defender of the Poor, etc.

Another factor which robbed this assembly of the eminently popular characteristic that the municipal spirit of the institution required, was the presence of the Governor, who was its President Inherent, and though he had no voice in the proceedings, he had the right to vote in case of a tie. Therefore, the influence that the presence of a magistrate invested with such authority had on the members of the Cabildo, can well be imagined. Notwithstanding this, the Cabildos gave legal recognition to the struggle for independence right at its incipency, as they assumed the representation of the people in the absence of the legal authority, on the imprisonment of the sovereign.

"This deficiency in the guarantees offered by the Spanish government, will be the cause for the first disturbance within the patriotic government, the proceedings of which are a reproduction of the Colonial government; the same tyranny over the masses by the small oligarchy in control of the government; the same lack of respect for public opinion, which is not in any way consulted in public matters; the same dictatorial and despotic manner in dealing with the various sections of the country, which compose the nation."

When the divers divisions of what once constituted the

great domain belonging to the King of Spain, secured their independence, the newly constituted governments followed the same despotic methods of government. Buenos Aires established since 1810, a government under the direction of a society of influential individuals, who, though cultured, did not understand the rudimentary principles of a free government. This society was known as "Logia Lautaro," a secret order founded by Miranda, which continued to rule despite the fact that it did so in violation of the law, inasmuch as public matters should not be carried on secretly.

This group of well-intentioned but politically unfit citizens were the rightful heirs of Spanish political incompetence based on despotism. All the civil wars which have taken place can be attributed to the inefficiency in governmental affairs, inherited from the mother country.

Yet practice and experience have enabled the South American countries to become exemplary governments, many of which could serve as models of progressivism for some of the governments of Europe, specially as some of the latter are just beginning their apprenticeship in the matter of government organization deserving of popular approbation. In this connection we ask: "How many lustrums will elapse before they become thoroughly republican forms of government?" Not long, let us hope, for the people have awakened and buried the crowns deep in the ground.

Following their independence, the three northern republics—Venezuela, Nueva Granada and Ecuador—formed a confederacy under the name of Colombia, selecting as their first President, the Liberator Bolívar. This confederacy was short-lived, as Bolívar's resignation brought about its dissolution and the organization of three separate and independent states was effected, as follows: Venezuela, a federal republic; Colombia, a unitarian republic, formerly federal; Ecuador, a unitarian republic.

Peru, Bolivia, Chile, Uruguay and Paraguay are unitarian republics. Argentina and Brazil, the two most important countries of South America, have adopted a federal form

of government with a constitution patterned after that of the United States of America.

As to the relations between Church and State, all these republics exercise religious liberty, but in Argentina, in Chile, and in the other Spanish-speaking countries, the Church has maintained its influence to the extent that it has prevented the enactment of laws granting divorce, with exception of Uruguay, which has the most progressive legislation of all the countries of South America. Both Uruguay and Brazil have separated the State from the Church.

Primary education is compulsory in all the different South American states, and the university training in some of them competes with leading European countries and with the United States of America. The primary schools of Uruguay and Argentina show a superior rating over those of France, Italy and Spain. Other places show a large percentage of illiteracy, particularly where the indigenes are in the majority.

All the mediums that modern civilization has to offer for the general advancement of the individual—primary and technical institutions of learning, scientific societies, up-to-the-minute illustrated magazines and dailies, fashion establishments, municipal water plants, heating plants, sewerage systems, comfortable public conveyances, luxurious theatres, electric lighting systems, magnificent hotels, etc., etc.—are to be found in all large cities and important commercial centers of South America.

The large operatic companies of Milan, Italy, visit Buenos Aires and Montevideo every winter, remaining during the months of May, June, July, and August. Dramatic, light-opera and vaudeville companies frequently visit Buenos Aires, Montevideo, Rio Janeiro, Santiago and other large cities.

The modistes and tailors offer the very latest Parisian creations, and as to general innovations, many new inventions are introduced in South America before they become known in Europe, for in order to avoid European competi-

tion, the merchants turn to South America with all the novelties that the mind of the inventor can conceive.

There is no restriction to the admission of men of all nationalities and the use of passports is unknown. Everybody enters and leaves the ports without permission of any kind, provided the individual is not a notorious vagrant or criminal. It is not supposed that the color of the skin imparts either intellectual or moral superiority, neither is it feared that the labor of the foreigner will in any way hurt that of the native, as is the belief of the North Americans, Australians and South Africans, who bar the Japanese and the Chinese. Intellectual superiority belongs to him who studies and toils the hardest.

The member of the small negro population that remains in the La Plata, is not only mentally and morally the equal of the average European immigrant, but is far more intelligent than the immigrants who come from certain parts of Russia, the Balkans and other backward countries of the Old World. Some of these poor unfortunates are not only ignorant but almost barbarians, while a large number of the Negroes have been brought up in the homes of cultured people who have given them a thorough education. Nearly all the Negroes of this region can read and write and are unusually refined of manner.

The South Americans have not committed the error that the North Americans did in building a Chinese wall between white and black, in the way of barriers in hotels, barber-shops, etc., and even on railroads where they arrange to have separate ticket-offices for the colored people.

Had the blacks intermarried with the whites it would have taken only a few generations of mulattos with each new generation lighter-complexioned than the preceding one, for the black coloring to have disappeared as it has in the La Plata, and as it is gradually disappearing in Brazil, the Negro being only a small fraction of the total white population. If the barrier continues, in time there will be 15, 20, 30, 40 million and more men who will have consummate

hatred for the rest of their countrymen of another race, and this causes the weakness of nations.

POLITICAL HERITAGE OF SPAIN

It is in order to explain the idea that the Spaniards had as to the functions of the State and the rights and duties of the citizens, so that the reader may form an opinion and have a clear understanding as to many of the historical events which have taken place in the countries of South America. We have been specially favored by the opportunity afforded us to read about the events as described in the history of Spain, whether it refers to Spain as the mother country in its internal development, or in its relations with its colonies in America, written by English and American writers of note, such as Hume, Prescott, Robertson, etc., who in our opinion appear more impartial than the Spanish historians who, imbued with erroneous ideas as to what patriotism should be, are not sufficiently independent themselves to speak authoritatively.

There has recently appeared a very interesting book by the eminent Professor William R. Shepherd of Columbia University, in the city of New York, which book has been translated into Spanish by the distinguished Venezuelan publicist Don R. Blanco Fombona. The reader, who is desirous of a more thorough knowledge of the political history of South America, should read this instructive volume entitled "*La América Latina*" (Latin America). Professor Shepherd treats of Spanish psychology as a competent authority only can, for besides being thoroughly conversant with world history, he has lived in Spain and visited some of the South American countries.

With reference to government, Professor Shepherd says: "To the Spaniard, for example, his village, town or province was his country. What lay beyond local bounds was something to be regulated by officials in whose appointment, presumably, he had no choice. An absolute monarchy and an absolute church, that would safeguard the individual

against a foreign foe, and alien faith, were all that could be desired in larger concerns. Accordingly, whether he lived in his native land or in a distant colony, he felt more or less content, so long as his local privileges were undisturbed. The spirit of individualism was strong, but its manifestation worked within narrow lines. On this foundation Spain, and to a great extent Portugal, based their respective systems of colonial administration.

"On the other hand, following equally the Roman principle of 'divide and rule,' powers, duties and privileges were rather vaguely defined, with the result that officials, classes and individuals were set off deftly against one another."

"No colonial authority was permitted to grow too strong, and no colonial counterpoise to become too weak to serve the interests of the mother country. Every person, whatever his rank or station, and every governing body enjoyed the privilege of communicating directly with the government in Spain, and the exercise of the privilege was constantly encouraged. By this means temptation to arbitrary conduct could be restrained, no less than expressions of dissatisfaction checked or mollified which otherwise might bring on a revolt. Where abuses existed, they were apt to take the form of pecuniary corruption, rather than of willful misrule."

Regarding the church Shepherd says: "No monarch of the time was deemed to be so Catholic as his Majesty of Spain, and none enjoyed in his dominions oversea so great an amount of ecclesiastical power. By various papal grants, within twenty years after the discovery of America, the Spanish crown was given substantially complete jurisdiction there over the organization and activities of the church. In exercise of the 'royal patronage' (real patronato), it controlled appointments to benefices and other holdings, regulated the conduct of the clergy, and disposed of ecclesiastical property and revenues."

"The Church, in fact, was the greatest instrument of authority which the crown possessed in the colonies. Just

as it had perpetuated in Europe the traditions of Rome, so in the New World it perpetuated those of Spain. Rather than secular agencies of any sort, it was the clergy who adjusted the relationship between the whites and the Indians, who inculcated loyalty to the Spanish throne and contributed in general to the maintenance and extension of Spanish rule.

"In order to prosecute the work of the Church more effectually, the Inquisition was set up, in 1569. Thereafter confining its attention exclusively to the European element in the population, that dread tribunal punished heretical Spaniards and foreigners, like sailors, smugglers and pirates, who might have the misfortune to fall into its clutches. But, except for its censorship of thought, the activities of the Inquisition in America were much less pernicious than has been commonly supposed.

"So great were the wealth and influence of the Church that it became customary to estimate the importance of a given locality by the number of its ecclesiastical buildings."

... large production of grapes and wines,
Santa Fe (50,000), a very old city on the Paraná; *Bahia*

CHAPTER XII

CITIES OF SOUTH AMERICA

The most important city of South America is Buenos Aires on the banks of the La Plata river. It has a population of more than 1,640,000, and next to Paris it is the largest Latin city in the world. More than half of its population is of foreign extraction, the largest percentage of which are Italians and Spaniards. Therefore, it is Latin because of its language, its Spanish origin and the majority of its inhabitants. It possesses all the qualities of a big capital city—magnificent palaces, university, museums, excellent hotels, beautiful boulevards, and an unusually active and extensive business district for the reason that it is one of the most important of the world's ports. It is the federal capital of Argentina.

Its skyscrapers are built on the American plan. Its tower of Güemes, with its attractive restaurant at 270 feet from the ground, is one of its main structures and one which no doubt would attract favorable comment if duplicated in New York City. The congestion of traffic in the business streets has compelled the construction of a subway.

Rosario is the second city of importance in Argentina. It has more than 200,000 inhabitants, and as a port it is also second in importance to Buenos Aires.

Other important cities are: *La Plata* (120,000), near Buenos Aires; *Córdoba* (100,000), a very old city, which has the oldest university of the La Plata; *Tucumán* (80,000), in the center of the republic in a sugar producing region; *Mendoza* (50,000), often called the "California of Argentina" on account of its large production of fruits and wines; *Santa Fe* (50,000), a very old city on the Paraná; *Bahía*

Blanca (40,000), a seaport of great importance in southern Argentina.

In Uruguay, at the mouth of the La Plata river and at a distance of 120 miles from Buenos Aires, is situated the City of Montevideo (450,000), capital of the republic, noted for its beautiful beaches, mild climate, splendid hotels with special bathing accommodations, wonderful parks, its model university, and thoroughly up-to-date private schools and colleges. It is a port of exceptional importance, not only commercially, but due to its geographical position, it is also attractive from a residential standpoint, at the same time combining as it does extraordinary educational advantages.

Other important cities in Uruguay are: *Salto* and *Paisandú*, two important ports also on the river Uruguay, with a population of more than 30,000 each; *Mercedes*, on the river Negro, with 25,000 population.

The second largest city in South America is Rio de Janeiro with a population of 1,000,000. Its enviable location, on a magnificent gulf surrounded by high mountains, entitles it to first place among the panoramic cities of the world. It is a highly cultured city and its importance as one of the leading centers in the world of commerce, particularly in the exportation of coffee, is well known.

The city of Bahia, or Sao Salvador (300,000), is one of Brazil's principal ports, and so is the port of Recife, or Pernambuco (250,000), through which large quantities of coffee and sugar are exported; Belen, or Pará (170,000), large city in northern Brazil, is another port of commercial importance.

All these cities have been at one time or another infested with yellow fever, but it has been eradicated, thanks to the efforts of the health authorities.

The Paulistas, or first Portuguese settlers of Brazil, established themselves in the state known as San Paulo, where their intermarriage with the Indians produced an energetic and venturesome race—the Mamelucos of San Paulo—who undertook the conquest of lands in the interior, in

search of Indians whom they could enslave. They later attacked the La Guayra Missions on the boundary line of Paraguay, penetrating along the eastern side of Uruguay, this time in search of live-stock. The Mamelucos were the highwaymen of the colonial times and the dreaded foes of the Spaniards, who were their direct opposite. The region of San Paulo has furnished to Brazil this country's organization, the largest number of men of note. The city of San Paulo is the second city of importance in Brazil, with a population of 400,000. It has one of the world's famous universities situated away from the coast, with Santos, the world's largest coffee exporter, as the most convenient port.

Santiago (350,000), the capital of Chile, stands on the bank of a small river. It is a famous center of culture, and has among its institutions of learning a world-known university and excellent preparatory schools. *Valparaiso*, with a population of 170,000, is the port for Santiago, and the most important on the Pacific coast of South America.

Other important cities in Chile: *Iquique* (40,000), a port of importance in northern Chile; *Coquimbo*, noted for its rich copper mines; *Concepción*, *Talcahuano*, *Valdivia* and *Puerto Mont*.

La Paz (94,000), the capital of Bolivia, is at 3,100 meters elevation. *Potosí* (200,000), at 4,000 meters above sea-level, is remarkable for its silver mines. *Sucre*, *Chuquisaca* or *La Plata*, formerly the capital, is a city of great historical interest.

Lima (150,000), the capital of Peru, is only 10 kilometers from the port of Callao (48,000), and is also an interesting historical center, having been the capital of the Viceroyship of Peru. Other important Peruvian cities are: *Cuzco* (30,000) and *Arequipa*.

Quito (50,000), the capital of Ecuador, stands on a high plateau in the central part of the republic. It is surrounded by high volcanic mountains, one of which is Mt. Cotopaxi. *Guayaquil* (51,000), on the gulf of the same name, is the leading seaport.

Bogotá (125,000), the capital of Colombia, is 2,650 meters above the level of the sea. *Barranquilla* (50,000), on the river Magdalena, is the second in importance and the leading port of Colombia. *Medellín* and *Cartagena* are also important cities of the republic.

Caracas (75,000), capital of Venezuela, the home of the Liberator Bolívar, is just a few kilometers distance from the coast and from the port of La Guayra (25,000), the principal port of Venezuela. *Valencia* and *Maracaibo* are two leading commercial centers, and *Ciudad Bolívar*.

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CHAPTER XIII

TRANSPORTATION RAIL AND WATER ROUTES OF SOUTH AMERICA

SUMMARY

Similar Configuration of Both Americas—The Large Navigable Rivers in the Interior of the Continent—Principal Railroad Lines—The Future Great Commercial Route of South America Across the Center of the Continent—Comparisons of Railroad Lines of the Countries of South America—The North American Railroads.

SIMILAR CONFIGURATION OF BOTH AMERICAS

(See Continental Relief Map)

Both North America and South America are alike in shape, both being triangular with the widest angle on the side of the Atlantic (Labrador in North America and extreme eastern Brazil in South America), and the longest side, formed by the Rocky Mountain Range and the Andean Mountain Range respectively. It will also be noticed that the eastern range of mountains of the coast of Brazil corresponds to the Allegheny mountains of North America, and the Andes and the Rocky mountains correspond not only to the general formation but even as to sub-divisions as for instance: the Sierra Nevada corresponds to the Cordillera Occidental of the Andean mountain system, while the Cordillera Real, or Oriental of Peru and Bolivia, corresponds to the main range of the Rocky mountain system.

The desert plateaus of the Salt Lake region correspond to those in Bolivia in the region of Lake Titicaca. The great river Paraná and its tributary the Paraguay, conform to the Mississippi and the Missouri rivers of the United States of America, and like the latter, run from north to south through both warm and temperate climes, but with the position of the climatic belts reversed. In South America, the lands in the northern part have a tropical and semi-tropical

climate, while the corresponding latitude north of the equator embraces the southern portion of North America.

The Paraná forms a delta at its mouth, but much larger than that formed by the Mississippi. Conditions of navigation in the Paraná and the Paraguay are superior to those of the Mississippi, particularly the Paraguay, which without any special arrangement or contrivance, is navigable throughout its course.

The Mississippi-Missouri stream is 7,200 kilometers long. The Paraná itself measures 4,500 kilometers in length. The volume of water which the La Plata river (that of the joint streams of the Paraná and Paraguay) empties into the ocean is 42,000 cubic meters per second of time (debit) in comparison to 17,000 cubic meters of the Mississippi stream, or two and one-half times as large. The Amazon shows still a larger volume—80,000 to 120,000 cubic meters per second of time.

The region of British Columbia and California on the Pacific coast of North America is represented in South America by the region in southern Chile with its many archipelagos covered with immense virgin forests where gigantic trees for building material may be found. California's vineyards are duplicated in the Valle Central (Central Valley), often referred to as the "Chilean California."

Dr. Berg, naturalist and former Director of the Buenos Aires and Montevideo Museums, following his return from a trip of exploration which he made to the island of Chiloe and others of southern Chile, stated that the forests of Chile surpassed in grandeur those of Norway and Sweden, where he had visited several times. The extreme southern part of Chilean Patagonia has equally as heavy rainfall as the region of British Columbia, and its fishing season corresponds to that of Alaska.

The warm coast line of Peru, Ecuador and Colombia is a reproduction of that of western Mexico with its occasional affliction of yellow fever germs.

The continent of South America has 25,000 kilometers of coast-line divided thus: Atlantic Ocean—16,000; Pacific Ocean—9,000, the Atlantic taking in two sides of the triangle. It has not the solidity of either Asia or Africa over which it has the advantage, like North America, of its large navigable rivers through the interior of the continent. As to the proportional ratio between length of coast-line and continental surface, it occupies third place as follows: Europe—1 kilometer of coast-line to 289 square kilometers of surface; North America—1 to 207; South America—1 to 720; Asia—1 to 763; Africa—1 to 1,420.

LARGE RIVERS OF SOUTH AMERICA

The interior of South America is drained by the Paraná, the Paraguay and the Amazon, which has tributaries 3,000 kilometers long, among them the Madeira, a large navigable stream. Many of these streams are navigable for long distances as will be noticed on the map "Means of Communication" appearing in this book. Bolivia, Brazil, Peru, Ecuador and Colombia have communication with the Atlantic Ocean through the Amazon.

PRINCIPAL RAILROAD LINES

There are two interoceanic railroads: Buenos Aires to Valparaiso, 1,200 kilometers long, and another one from Bahía Blanca to Zapala at the foot of the Andes, to be extended to the Pacific at Valdivia.

The railroad line which connects Montevideo and Rio de Janeiro, a distance of 3,100 kilometers, runs along the eastern coast of Brazil, and is to be extended to Bahia and Pernambuco, where it will connect with Atlantic steamers, thus shortening the time of travel from Europe to the La Plata. On crossing the Atlantic to Dakar on the west coast of Africa, a distance of 1,200 miles, it will in time be possible to make connection with the railroad projected

across the Desert of Sahara to the Strait of Gibraltar and across to Spain.

A new line has been recently completed across Brazil from Corumbá, a port on the Paraguay, eastwardly to Rio de Janeiro (2,200 kms.), via San Paulo and Santos. Thus, the distance of fifteen days from Corumbá via the Paraná and the La Plata to the Atlantic, has been reduced to five days. From Corumbá this line will cross the Chaco river to Cochabamba in Bolivia, which has connections with Pacific ports. This will be the most important interoceanic railroad line in the continent.

Chile has a longitudinal railroad extending from Port Mont in the southern part, via Iquique to Tacna, covering a distance of 3,541 kilometers, according to the map by Don Juan de Santa Cruz, cartographer, Ministry of Railways of Chile.

The Central Argentino railroad extends from the port of Rosario on the Paraná to the Argentine-Bolivian frontier to Córdoba, Tucumán, Salta and Jujuy, as far as Quiaca, which is 3,000 meters above sea-level. It will be constructed across the Bolivian plateau to Tupiza and Uyuni (200 kms.), over the line that goes to La Paz, the capital of Bolivia, and which starts from the port of Antofagasta in Chile. Were we to follow the meridian, the distance would be 12 degrees with Rosario, 34° south latitude and Quiaca in latitude 22° south, a distance equal to 1,200 kms., but as the portion that lies between Rosario and Córdoba runs east and west for a distance of 400 kms. or 4 degrees, and it has numerous curves, its entire length is more than 3,000 kilometers. (See map "Means of Communication.") From Uyuni the line extends to Lake Titicaca at Guaqui, where connection with steamers is made, crossing the lake (4,000 m. elevation) to Puno on the opposite side, the starting point of the railroad to Cuzco, the famous city of the Incas. There is no railroad connection from Cuzco to Huancayo, the terminal point of the line from the port of Callao, only 650 kilometers. In fact there are only 850 kilometers that

lack railroad communication from Buenos Aires on the Atlantic to Callao on the Pacific, and to Lima, the capital of Peru.

The railroads of Bolivia connect with three Pacific ports—Antofagasta, Arica and Mollendo. The Antofagasta line crosses the Andes at a height of 4,788 meters at the station called Punto Alto. The Bolivian Central railroad, which runs across the plateau as far as Lake Titicaca, has branches to Potosi, La Paz and Cochabamba and a short branch is to be constructed to extend to port Chimoré over the Mamoré, a very important navigable stream connecting with the Madeira, a tributary of the Amazon.

The cataracts of the Madeira (Saltos Girau) impede the navigation of this large stream and so it became necessary to construct the railroad from Guajaramirin to Porto Velho (200 kms.). The government of Brazil constructed this line as compensation for the territory of Acre, which Bolivia ceded to Brazil, and which is valuable for its plentiful rubber production.

Bolivia plans the construction of another railroad line from Riberalta, a port on the Beni river, which is navigable from Port Pando near the city of La Paz, to the upper terminus of the railroad to the Madeira, at a point on the Beni river where navigation is obstructed. Bolivia has better prospects in securing an outlet for its vegetable products through the La Plata where freight rates are lower, besides having the opportunity to dispose of a large portion of the products which differ from those of the La Plata region. Many of its minerals would also find there a ready market, but the bulk of minerals should be exported to Europe and North America. Port Suarez, Bolivia, on the affluent Paraguay river, is situated opposite the Brazilian port of Corumbá, which has direct regular steamer communication with Montevideo and Buenos Aires, and a few steamers have occasional service from Port Suarez to La Plata ports.

A railroad is planned to connect Port Suarez with Cochabamba in central Bolivia, in connection with the railroad

running through the plateau, thus establishing rapid communication with the La Plata region.

Peru has, besides the railroad from Mollendo to Arequipa, Puno and Cuzco, another one from Callao, its most important port, to Lima, Oroya and Pasco, the last two situated in the most productive mineral region of Peru.

This is the highest railroad in the world, its highest point being Galera, near Oroya, 4,814 meters elevation (approx. 16,000 ft.; the highest peak in Europe is Mt. Blanco at 4,810 m. elev.), and, in the short distance traversed, it runs through three climatic belts—hot on the coast, temperate on the plateau, and very cold on the lofty summits over 4,000 meters above sea-level. The line of perpetual snow in this region is at 5,500 meters in the Cordillera Occidental and at a lower altitude on the Oriental. On the Alps, the line of perpetual snow in Switzerland is at 2,800 meters, reason for the Jungfrau railroad operating at Interlaken only during the summer, the last station being at 3,100 meters elevation.

In order to complete the Pan-American railroad it will be necessary to construct the lines north of Pasco in latitude 10° south, to Guayaquil, which has railroad connection with Quito just below the equator, thence to Panama in latitude 9° north across Colombia, a total distance of 19 degrees or 1,900 kms. in a straight line. In all, there are more than 3,000 kilometers over which to construct a railroad that will extend from Panama to the city of Buenos Aires. La Paz, the capital of Bolivia, would be the central point of the Pan-South American railroad, the distance from La Paz to other important centers, in kilometers being: Lima, 1,800; Rio Janeiro via Port Suarez, 3,000; Asunción, capital of Paraguay, along the Pilcomayo, 1,800; Montevideo via Salto and Asunción, 3,300; Buenos Aires via the Quiaca and Central Argentina railroad, 2,640; Santiago, Chile, 2,600.

The construction of the Pan-American South American railroad will not prove as difficult a task as the railroad which is being built by the English through Africa, and

which will connect Cairo with the Cape of Good Hope at the southernmost extremity of the African continent. This railroad would have no doubt been completed by this time had not the world-war interrupted its construction.

The distance to be covered across continental Africa from Cairo to the Cape is 10,000 kms., with the following connecting lines: Cape Town to Elisabethville near Lake Tanganyika (5,000 kms.), already built; Elisabethville to Lake Tanganyika (500 kms.), under project; Lake Tanganyika to Lake Albert (700 kms.), under project (distance across Lake Tanganyika 750 kms.); Khartum to Cairo (2,000 kms.), already built; Khartum to Lake Albert (1,800 kms.), under project. Total 10,000 kms.; 3,000 kms. of this distance are yet without a railroad necessary to connect both the northern and southern extremes of Africa, with steamer connection to cross Lake Tanganyika (750), as is done in making the connection at Lake Titicaca (275).

We trust that the capital of enterprising Yankees will be a contributing factor in the completion of what both Americas have so long desired—the Pan-American Railroad—by building it over the remaining 3,000 kilometers in South American territory and joining it to the lines which connect New York with Mexico and ultimately with the countries of Central America.

THE FUTURE GREAT COMMERCIAL ROUTE OF SOUTH AMERICA

From the La Plata to Panamá route—the Paraná, the Paraguay, the Tapajos, the Amazon, the Rio Negro to Panamá.

The Pan-American railroad, which is planned to cross the Andean region and into the Argentine republic, is badly needed in order to facilitate the commercial relations between the countries of the Andes, as well as to more closely bind their ties of friendship, but it will not be the best commercial route for the interchange of business relations between the region of La Plata and that of the Amazon and the United States of America.

The railroad from Buenos Aires to Lake Titicaca can

not possibly compete in the matter of freight rates with the river transportation of the Paraná and the Paraguay to Port Suarez and Corumbá in latitude 19° south, and to Cuyabá in Brazil, latitude 16° south, directly east of Lake Titicaca, which is the route used by the Lloyd Brasileiro Steamship Line. From Cuyabá, northwardly, the river of the same name can be navigated as far as the land that separates it from the source of the Arinos, a tributary of the Tapajos which finds its way into the Amazon. It is at this point, between the source of the Cuyabá and the Arinos, that the canal uniting the La Plata and the Amazon should be built, and which, according to Captain Bossi, who explored the region, will not be a difficult task to accomplish. The Tapajos river is obstructed for navigation by cataracts (see corresponding map), which can be avoided by building a lateral canal, finally connecting with the Amazon westwardly to Rio Negro to the frontiers of Colombia and Venezuela, from which place a railroad could be constructed across Colombia towards Bogotá and Panamá as the terminal points. Not more than 1,200 kilometers of railroad would have to be built across the republic of Colombia, which together with two canals on the Tapajos river would establish an economical commercial route from the La Plata to the Panama Canal. The reader will observe by the map that the route Paraná-Tapajos follows the Greenwich meridian of longitude 58° west, starting from latitude 34° south, to very near the equator, or a distance of a little over 3,600 kilometers north and south. Therefore, the distance of 6,000 kilometers from Buenos Aires to Panama is divided as follows:

Buenos Aires to the Amazon.....	3,600
Point of entry, Amazon to Rio Negro.....	1,200
Railroad, Rio Negro to Panama.....	1,200

It is our opinion that this enterprise would receive the approbation of Argentina, Colombia and Brazil. There is at present a steamship line connecting Paisandú, Buenos Aires and Montevideo with Manaos on the Amazon at the

mouth of Rio Negro by a roundabout way via the Atlantic and the Amazon, which is equal to about double the distance.

It will be noticed that this proposed great, commercial route of South America (marked in blue on the map), crosses lands in both the torrid and temperate zones, which are not accessible by the routes now available. The La Plata would ship wheat, flour, meat and other products and would in turn receive lumber of all kinds, mate, tobacco, tapioca, rubber, etc. In comparing this route with that of the interior of Africa, which the English are about to complete, we find that the latter passes through less fertile soil, not as rich in either animal or vegetable life, besides, the former is only half as long and its construction will be far more economical. The length of the African route is 10,000 kms.; the South American, 6,000 kms.

The distance over desert land, where the railroad of the central African route is yet to be constructed, is 3,000 kilometers, while there are only 1,200 kilometers of desert land and sparsely settled district over which the railroad through Colombia would have to be built.

It will be noticed that 4,800 kms. of the 6,000 of the great South American route, are through large streams where no locks are needed, only a few small canals.

The central railroad of Colombia will cross the Guaviare and Meta, navigable tributaries of the Orinoco, thereby establishing communication with the Atlantic. Before the Panama Canal was constructed, there was a plan to build a canal connecting the Rio Negro and the Orinoco, a difficult and expensive undertaking according to explorations made by Michelena under instructions by the Venezuelan government. From now on, the Panamá route will be the logical route for the western coasts of both Americas, for the commercial intercourse between Australia and Europe and for the principal north Atlantic ports dealing with the Pacific. Considering this fact, the direction of the Central Colombian railroad might be changed to start from the ports of

Tabatinga or Iquitos, should it prove more economical or convenient to operate.

SOUTH AMERICAN RAILROADS

YEAR 1919

	Area Square Kilometers	Length of Railroads— Kilometers	Per Each 100 Square Kilometers
Brazil.....	8,550,000	23,000	270 meters
Argentina.....	2,950,000	33,000	1,120
Peru.....	1,769,000	2,780	150
Bolivia.....	1,470,000	1,800	120
Colombia.....	1,300,000	1,000	77
Venezuela.....	1,020,000	925	89
Chile.....	757,000	8,200	1,083
Ecuador.....	307,000	561	180
Paraguay.....	253,000	250	90
Uruguay.....	187,000	2,600	1,400

NORTH AMERICAN RAILROADS

YEAR 1919

United States.....	9,386,000	410,000	4,300
Canada (Dominion of).....	9,659,000	44,000	450
Mexico.....	1,987,000	25,000	1,200

The railroad mileage of the leading South American countries, including the United States of America for purposes of comparison, is as follows, in consecutive order of greatest mileage: United States, Argentina, Brazil, Chile, etc., but taking in consideration the area of each country and the proportion of kilometers of railroad to square kilometers of surface, they rank as follows: United States, Republica Oriental del Uruguay, Argentina, Chile, Brazil, etc.

The railroads of South America are private property, as in the United States, England and Canada, and not government property, as in the case in Germany, where the government owns 90 per cent of the stock, in Austria 82 per cent, in Russia 77 per cent, in Italy 73 per cent, and in France 17 per cent.

CHAPTER XIV

THE MEAT-PRODUCING REGION OF SOUTH AMERICA—THE LA PLATA VALLEY

SUMMARY

Live Stock Inventory—Live Stock Killed in Uruguay and Argentina—Wool Production of the La Plata.

The La Plata Valley comprises the republics of Argentina, Uruguay and Paraguay, the Brazilian provinces of the Matto Grosso region (which is crossed by the Paraguay, a tributary of the Panama which, together with the Uruguay, forms the great estuary of the improperly named "Rio de la Plata"), and the province of Rio Grande del Sur, drained by the Uruguay and its tributaries.

Inventory of Live Stock, Including Cattle and Sheep in Argentina, Uruguay, Paraguay and Brazil, in 1919

	Cattle	Number per Sq. Kilo- meter	Sheep	Number per Sq. Kilo- meter	Head of Cattle per Inhab.	Head of Sheep per Inhab.
Uruguay.....	8,000,000	48	20,000,000	112	5.3	13
Argentina.....	31,000,000	11	81,000,000	27	3.8	10
Brazil.....	30,000,000	4	.....	...	1.2	..
Paraguay.....	5,000,000	20	500,000	2	5.	2

The foregoing figures plainly show that the republics of Uruguay and Argentina are the two leading live-stock countries of South America, in the production of both cattle and sheep. The live stock of Paraguay and Brazil is not as heavy in weight, and the meat is not as high a grade as that of the other two, and consequently sells at a lower price. This is due principally to the fact that the live stock of the La Plata consists almost exclusively of the Durham and Hereford breeds of English stock. These breeds can not be successfully raised in Brazilian and Paraguayan territory on account of the excessively warm climate, the many different varieties of insects that infest certain districts, and the small nutritive value of its grasses, causing these breeds to

gradually depreciate, and very often starve. Brazil has successfully tried the acclimation of the zebu of India, but its meat is somewhat tough and not as palatable as that of the native breeds, which, though not to be compared with the stock imported from England, is fairly satisfactory. The meat value of the native cattle is only about half of that of the English breeds introduced, besides not attaining full growth until the sixth or eighth year, while the English cattle have a high grade market value at three or four years of age.

The belt of the La Plata region, which is better adapted to the raising of live stock, lies between the parallels 30° to 40° south latitude, which embraces the republic of Uruguay lying between parallels 30° and 35°, a large portion of Argentina which lies between the rivers Paraná and Uruguay, the provinces of Buenos Aires and Córdoba, and the Pampa district. The leading live-stock states in Brazil are the following:

	Head
Rio Grande del Sur.....	6,500,000
Minas Geraes.....	6,300,000
Bahia.....	2,800,000
Matto Grosso.....	2,700,000
Goyaz.....	1,900,000
San Paulo.....	1,700,000

The State of Rio Grande, which heads the list, adjoins the republic of Uruguay on the north, and has a milder climate than central or northern Brazil. The other states are in the central part of the republic, where it is exceedingly warm and consequently not at all suitable for the breeding of English stock.

In numbers, the United States of America shows a larger production of live stock than Argentina, but their production of 60,000,000 head is not sufficient for their 110,000,000 inhabitants, and therefore the necessity of importing large quantities of meat from the La Plata region. Uruguay is the largest producer and exporter in comparison to the number of inhabitants, with 5.3 head of cattle and 13

head of sheep for each inhabitant; Argentina is second, with 3.8 and 10 per inhabitant, respectively. The proportion per square kilometer: Uruguay, 48 head of cattle and 112 head of sheep; Argentina, 11 and 27 respectively.

The price for a good steer in La Plata varies from 80 to 100 pesos, or at the rate of about \$0.15 to \$0.20 per kilo. The average steer weighs from 600 to 700 kilos. In Matto Grosso and in Paraguay, the price of steers varies from 30 to 40 dollars. The best Brazilian cattle are found in the State of Rio Grande, but not as high a grade as that of the La Plata. The provincial governments of San Paulo and Rio Grande are taking steps to improve the various breeds.

The Republic of Argentina has an intensive live-stock industry and cultivates large alfalfa fields for the increase of the market value of its cattle and sheep, while the Republic of Uruguay, which nature has favored with specially attractive climatic conditions, heavier rainfall and milder summer weather, has left it entirely to nature to supply the food for its vast herds, but should Uruguay follow other methods, its production of live stock could be doubled and perhaps quadrupled, inasmuch as its numerous river-streams could be economically and profitably utilized in the irrigation of lands, as is being done by Argentina on the Rio Negro, Neuquen, Mendoza, San Juan, etc.

Thus, the La Plata districts could increase their live-stock production with the improvement of the breeds and the fields and the cultivation of forage. Brazil could likewise increase its production, but the climate of the plains of Matto Grosso and Goyaz, which have the best prairie land, is too severe for the development of the English breeds. The states of San Paulo and Minas can better afford to try the improvement of their live stock in a general way, for though in the same latitude as the other central states, the climate of their high plateaus is much cooler and healthier in every respect.

Uruguay exported in 1916 638,000 head of cattle which were prepared in various packing houses and factories, in-

cluding that of Liebig of Fray Bentos; 846,000 were prepared in 1917, 273,000 of which came through the plant of a North American concern. The Liebig factory, which makes a specialty of extract of beef, prepared 101,000. The "salaaderos" prepared jerked-beef which is cut in pieces in the form of blankets, for exportation to Cuba and Brazil. The number and the value of the beef prepared at the various cold storage plants, packing houses and factories for the year 1916 was 638,000 bovines and for 1917 846,000, with a price of \$26,636,000 and \$35,329,000 respectively.

The total production in Uruguay, including local consumption, was 797,000 bovines in 1916, and 863,000 in 1917. The Liebig factories prepare the canned beef, beef extract and tongue, and the cold storage plants also prepare these same products with exception of the beef extract.

Sheep prepared in 1916: 192,000. In 1918 the Swift plant exported hog products such as ham, bacon, sausages, fats, etc. The pig-breeding industry promises to have a regular and rapid growth.

An increase in the preparation of meats in the cold-storage plants is noticeable, and a diminution in the preparation of jerked or dried beef. During the five years from 1891 to 1895 inclusive, the packing houses of Uruguay, Argentina and Rio Grande in Brazil, prepared jerked beef from 9,894,000 animals or an average of about 1,978,000 per year. The five years from 1911 to 1915 inclusive, the number decreased to 6,496,000, or a yearly average of 1,299,000. This reduction may be attributed to the establishment of the large cold storage plant of Swift at Montevideo and others at Rio Grande, which had none before. The suet exported in 1916 from Uruguay, 35,000 tons.

Argentina exported in 1917, 71,000 bovines and 355,000 tons of frozen beef, 38,000 tons cold-storage beef, and 39,000 frozen mutton—a total of 432,000 tons and 71,000 bovines.

The exportation of meats has constantly increased since 1910, and the prices have also increased in proportion to the demand. In Montevideo and Buenos Aires, high grade

cattle sold for as much as \$0.20 per kilo, bringing the price of the average steer weighing 600 kilos, to \$120 American gold. Salt meats and jerked-beef will gradually disappear from the Argentine and the Uruguayan market. Uruguay exported in 1917 only 7,600 tons valued at \$2,000,000.

Price of Livestock at the Liniers Market in Buenos Aires on the 18th of February, 1919

Value of the Argentine peso at the prevailing rate of exchange,	\$0.45
Oxen for consumption and packing-house purposes.....	\$150 to 231
High grade steers.....	280
Steers for packing-house purposes.....	219 to 230
Medium size steers.....	189 to 204
Medium fattened steers.....	167 to 186
Small steers for consumption.....	44 to 146
Cows.....	72 to 210
Heifers.....	35 to 126
Calves.....	25 to 108

The Matanza Market (Buenos Aires) had prices as follows

Geldings for cold storage.....	\$13 to 21
Geldings for slaughter house.....	21 to 25
Sheep for cold storage.....	14 to 24
Lamb.....	4 to 9
Lamb for cold storage.....	10 to 12

Montevideo market prices on the same day

Exchange, American \$1.00 value; Uruguay, \$0.82

For cold storage and factories—Per kilo
 On the hoof..... \$0.11 to \$0.14
Per kilo

Cows..... \$0.092 to \$0.120

For local consumption:

Oxen.....	\$0.118 to \$0.126
Steers.....	0.115 to 0.135
Cows.....	0.103 to 0.133
High grade cows.....	0.140
Calves.....	0.90 to 0.150

Value of the Uruguayan gold dollar—on the date last above mentioned—\$2.695 in Argentine currency; four Uruguayan gold dollars per £.

Live stock constitutes the principal and almost exclusive exportation of the Republica Oriental del Uruguay. In 1916, the value of agricultural products exported amounted to one and a half million dollars, against seventy-one million dollars' worth of live stock. There has been a noticeable annual increase since 1890, when the live stock exported

showed a value of \$26,000,000, \$37,000,000 in 1900, \$71,000,000 in 1916, and more than \$100,000,000 in 1917. This rapid increase does not necessarily correspond to the increase in the number of head, but to the higher prices paid for correspondingly higher grade stock, the weight of which has also increased materially with the improvement of the breeds by the introduction of the Durhams and Herefords. In order that the reader may form an idea of the difference in value between the native and the mestizo cattle or the native cattle improved with the English breeds, we give the following figures as per data of the Argentine Rural Board for the Buenos Aires market for the month of December, 1918, in Argentine money:

Mestizo steers.....	220, 200,	170 pesos
Native steers.....	140, 110	"
Mestizo cows.....	160, 115	"
Native cows.....	135, 75	"

The sheep production has decreased considerably in Uruguay within the last ten years, for though there was a total of 28,000,000 head in 1908, there are at present only 20,000,000, with a slight increase in 1918 and 1919 over the few years preceding. The Uruguayan wool sells at a higher price than that of Argentina, because it is much cleaner.

The total exportation of meat of all kinds from Uruguay during the year 1916, was 120,000 tons, classified as follows:

On a basis of 1,000 kilos to a ton, and four Uruguayan gold dollars per pound sterling, on February 15, 1919, at the following rate of exchange—Change at par—51 1/16 pence; 1 Uruguayan dollar=\$1.035 American, or \$1.072 Argentine=5 Francs 36 cents (5.36 Francs).

1916			
Frozen beef.....	63,000 tons	\$15,189,000	Uruguayan
Cold storage beef.....	8,000 "	2,291,000	"
Canned beef.....	20,000 "	5,800,000	"
Beef extract.....	210 "	504,000	"
Frozen mutton.....	3,700 "	843,000	"
Jerked beef.....	4,100 "	1,045,000	"
<hr/>		<hr/>	
120,000 "		Total, \$25,682,000	"

In 1917, the exportation of meats amounted to 125,000 tons and 74,000 live bovines.

The decrease in sheep production is plainly shown by the figures below, which represent the wool exported from Uruguay:

	Kilos
Annual average during the five years from 1906 to 1910.....	48,898,000
Annual average during the five years from 1911 to 1915.....	58,556,000
1914.....	44,587,000
1915.....	37,904,000
1916.....	30,602,000
1917.....	39,627,000
1918.....	45,000,000
Wool exported by Argentina during 1917.....	127,000,000

According to data published in the Argentina Statistical Bureau, the wool exported from Argentina in 1917 amounted to 127,000 tons, which figures do not correspond to the 81,000,000 head of sheep as shown by the Argentine statistics. Figuring the weight in kilos to correspond to the weight of the Uruguayan sheep, the Argentine sheep should not have numbered more than 60,000,000.

Live Stock Sold in the North Montevideo Market in 1916 and 1917

	Bovines			Sheep	
	Con- sumption	Cold Storage	Total	Con- sumption	Cold Storage
1916.....	219,165	419,340	638,505	51,000	192,000
1917.....	182,148	664,432	846,580	158,778	Nothing

The quantity of meat consumed by the city of Montevideo, was 32,000,000 kilos in 1915 and 34,000,000 in 1916. Hides exported through the port of Montevideo in 1916 and 1917, as follows:

	Salted Bovines	Dried Bovines	Salted Young Ox and Heifers	Dried Young Ox and Heifers	Grand Total
1916.....	675,699	920,825	205,625	26,759	1,828,908
1917.....	920,825	809,110	250,379	60,304	2,040,618

In 1917, 5,349,000 kilos of fat, and 10,526,000 kilos of tallow were exported: dried blood, 2,000,000 kilos; gut, 453,000 kilos.

Total value of exports from Uruguay for 1916, \$73,000,000;

for 1917, \$103,000,000, of which 97 per cent represents live-stock products.

Price of Meat in Montevideo

Price per kilo

	1913		1916	
	Minimum	Maximum	Minimum	Maximum
Roast.....	\$0.18	\$0.24	\$0.16	\$0.40
Pulp.....	0.17		0.16	0.32
Loin.....	0.27		0.24	0.40

Livestock Killed in Slaughter-house in the Country Districts of Uruguay in 1916

Bovines.....	98,000
Sheep.....	80,000

The above figures do not include the live stock which is exempt from taxation, as it is not destined for consumption by the people living in the farming districts, but for consumption in the towns and cities.

The live-stock industry of the Republica Oriental is favored, as we have already stated, by its exceptionally mild climate. Snow falls on an average of about every fifty years. There are several old residents of that region who had never seen snow until 1918, when it covered nearly the whole republic. Therefore, no shelter is needed for the live stock. That still bigger results are not shown, may be attributed to the fact that the live-stock raisers do not cultivate forage for consumption during the summer season, which is the critical period, inasmuch as if there is an insufficiency of rainfall there is naturally a scarcity of grasses, which causes the stock to starve in the congested districts. So in order to prevent this, the live-stock raisers arranged to graze no stock on a certain part of their pastures, so that they may utilize it in summer should the occasion require it, but which will not be needed in case of sufficient rainfall. It means that very valuable ground is going to waste, besides checking what would undoubtedly be a much larger increase in the production. The author happens to know of a big ranch owner who lost 30,000 head of cattle just for neglecting to plant forage, which would have saved his stock.

Argentina has many extensive prairies devoted to the cultivation of alfalfa hay where the livestock may roam at will. This would be impossible in Uruguay, but alfalfa hay could be cultivated, and in due time mowed, dried and stacked. The alfalfa fields of Argentina are at quite a distance from the ports, in some cases a distance of about 250 miles, which means of course considerable expense in the transfer of either live stock or forage to the point of shipment. In Uruguay the ports are a little distance from the fields.

The Uruguayan alfalfa differs from that of Argentina, in that the stalk of the former is shorter and more slender but has more leaves, which makes it more valuable for feeding purposes, the leaves being the nutritious part of the forage. Its productive powers last for five years and in some cases longer, which is sufficient time for it to yield good returns to the land owner. The alfalfa which is cultivated in Brie, France, and in all the Champagne region, lasts three years. The soil of Uruguay has all the elements necessary for the cultivation of alfalfa, such as potassium, lime and phosphorus, and as the air supplies the nitrogen it does not need nitrates like other plants. As a fertilizer, use may be made of the phosphate obtained from the bones to be had from the "saladeros" at ten dollars per ton of 1,000 kilos, which, when burnt and crushed, is sufficient for one hectare of surface (2,471 acres). Its reaction is the same as in the extraction of phosphorus, the phosphoric acid being slowly replaced by carbonic acid and forms carbonate of lime and frees the phosphoric acid dissolved in water and assimilated by the plants.

The natural reaction lasts for five or six years, and therefore no fertilizer is needed during that time. Potassium may be obtained by burning yuyo Colorado, an indigenous plant similar to the salsola of Spain, and which had been utilized in the making of soap, for ages past. If in addition to this, advantage is taken of the opportunity that Uruguay affords through its numberless small streams, which are not

to be duplicated by any other country in South America, and the land properly irrigated, if necessary, it can be readily appreciated that the scientific cultivation of forage will materially increase the production of live stock.

The region of Brie in France, produces about 6,000 kilos of alfalfa hay every year for three years, which quantity has been surpassed in the same length of time by a field in Villa Colon near Montevideo, and in addition, the Montevideo alfalfa continues to yield for five years instead of three as in Brie.

CHAPTER XV

THE CEREAL-PRODUCING REGION OF SOUTH AMERICA—THE ARGENTINA

SUMMARY

Agricultural Statistics of Chile, Uruguay and Argentina.

The republics of Chile and Uruguay produce wheat and other cereals in sufficient quantities not only for local consumption, but also for export, though the quantity exported is very small in comparison to that exported by Argentina.

CHILEAN AGRICULTURE

Chile has more than 700,000 square kilometers of surface, but the portion which can be utilized for agriculture even resorting to irrigation, is limited. The agricultural district called Valle Central, is scientifically cultivated and produces cereals of all kinds, vegetables and fruits, and the best of wines. According to the Chilean Bureau of Statistics published by the Central Statistical Department, the wheat production of Chile for the year 1916 was as follows:

<i>Hectares Cultivated</i>	<i>Quantity of Wheat Harvested</i>	<i>Quantity per Hectare</i>
422,000	484,000 metric tons	1,100 kilos

Other agricultural products harvested in Chile in 1916:

	<i>Metric Tons of 1,000 Kilos Each</i>
Corn.....	39,000
Oats.....	92,000
Barley.....	94,000
Beans.....	52,000
Bean-pods.....	11,000
Chick-pea.....	1,200
Lentil.....	960
Potatoes.....	315,000

The 57,000 hectares of vineyards produced 1,145,000 hectoliters of wine and 294,000 hectoliters of chicha.

As to live-stock, Chile does not have enough for its own consumption and therefore imports large quantities from Argentina. Chile had in 1916, 1,869,000 bovines and 4,568,000 head of sheep which produced 14,300 metric tons of wool. The southern region of Magallanes had almost half of the number of sheep (2,071,000). The larger part of the cattle is found in the austral provinces of Llanquihue and Valdivia, and the central provinces of Santiago and Colchagua.

URUGUAYAN AGRICULTURE

The Republica Oriental del Uruguay could develop into a great agricultural center like Argentina, as its soil produces wheat, barley, oats and other grains, but being sparsely settled, only enough for local consumption is cultivated. Irrigation is not necessary inasmuch as its one meter of annual rainfall is evenly divided throughout the seasons of the year, besides, it has more rivers than any other region of the same area in South America. It produces high grade wines, finest of fruits and vegetables, particularly fruits such as oranges, peaches, plums, pears, apples, etc., which compare with the best of their kind in California. In fact, it could be developed as a fruit center also, were the industry to be exploited as it is in the United States of America.

Lands cultivated in Uruguay in 1916-1917:

		<i>Harvested Tons of 1,000 Kilos</i>
Wheat.....	315,000 hectares.....	146,600
Corn.....	253,000 "	175,400
Oats.....	57,000 "	27,900

ARGENTINE AGRICULTURE

The area under cultivation in Argentina in 1917 was much smaller than what was under cultivation in 1913 immediately preceding the breaking out of the European war, or 12,000,000 and 13,000,000 hectares respectively. Products exported in 1917:

YEAR 1917			
Oats.....	271,000	metric tons	
Flax.....	141,000	"	"
Corn.....	893,000	"	"
Wheat.....	935,000	"	"
Wheat flour.....	112,000	"	"

Total agricultural exports for 1917, 2,400,000 tons valued at 144,000,000 gold pesos; total live-stock products, 947,000 tons valued at 376,000,000, or a total valuation of 520,000,000 gold pesos. (\$5 Argentine equals English pound.)

The agricultural products, which, since 1907, had been gaining in value over the live stock, diminished in 1917, but the increase in the prices of meat and wool covered the agricultural deficit of that year. Wool sold for as much as double the price paid in normal times, from 10 to 14 gold pesos in 1917.

CHAPTER XVI

THE MINERAL-PRODUCING REGION OF SOUTH AMERICA—CHILE, PERU AND BOLIVIA

SUMMARY

Mineral Wealth—Mineral Production of Peru, Bolivia and Chile—Commercial Activities of these Countries.

MINERAL WEALTH OF CHILE

After describing the wealth of the La Plata region which can adequately be called the "*Region of Cereals, Meat and Wool*," we next take up the study of the great Andean Mineral Belt, which comprises central Peru, Bolivia and northern Chile, and which region produces nearly all the niter, and a large portion of the copper, lead, silver and a few other metals of world-wide importance.

The northern part of Chile from Coquimbo to Iquique and the whole Peruvian coast form a vast arid region which on account of its having no rainfall had remained uninhabited until valuable minerals such as copper, iron, lead, etc., were discovered.

MINERAL PRODUCTION OF THE ANDEAN REGION IN 1916

\$1.00 Chilean peso=18 d.= \$0.222 Am. Dol. 1 Bol.=19½ d. 1 Peruvian Pound = English Pounds.

PRODUCTS	Chile	Bolivia	Peru
	Value in Chilean Pesos Gold Millions	Value in Bolivianos Millions	Value in Peruvian Pound Millions
Niter.....	330		
Copper.....	89	14	6.173
Coal.....	38	....	.....
Iodine.....	20	....	.....
Silver.....	2.2	2.9	0.038
Gold.....	1.6	0.3	.....
Iron.....	1.2	....	.....
Borate.....	1.8	....	.....
Sulphur.....	2	....	.....
Common salt.....	1	....	.....
Guano.....	0.7	....	.....
Antimony.....	...	13	.....
Bismuth.....	...	3.6	.....
Lead.....	...	0.3	0.051
Petroleum.....	...	....	1.182
Vanadium.....	...	....	0.309
Tungsten.....	...	....	0.099
Wolfran.....	...	1	

The principal minerals of Chile—
Niter and copper.

Principal min-
erals of Bo-
livia—Copper
and antimony.

Principal Peru-
vian minerals
—Copper and
Petroleum.

MINERAL WEALTH IN CHILE 1916

Niter constitutes the principal source of wealth of Chile, and in 1916 it represented 66 per cent of the total value of minerals exported from Chile, the *Antofagasta* district leading with 199,000,000 pesos, and *Tarapacá* second with 131,000,000. Next to *Niter*, *Copper* is the principal mineral of Chile. Value of Chilean copper exported in 1916, 89,000,000 pesos, or 20 per cent of the total value of minerals exported. Copper is found nearly throughout the whole of central and northern Chile, from Tacna and Antofagasta to Santiago and O'Higgins, Antofagasta and O'Higgins being the best producing regions.

Coal ranks third, of which 1,400,000 tons valued at \$38,000,000, were exported in 1916. The southern districts of Concepción, Arauco and Magallanes produce the most of the coal of Chile.

Iodine is fourth in rank, with a production of 20,000,000 pesos, in the districts of Antofagasta and Tarapacá. *Silver* comes next, the value of the quantity exported in 1916 having amounted to 2,200,000 pesos. *Sulphur* is next in rank, 2,000,000 pesos value having been exported in 1916. (See table of mineral production of Chile.)

The percentage of mineral wealth of the four principal mining districts of Chile is divided as follows: Antofagasta 51 per cent; Tarapacá 29 per cent; Concepción 6 per cent; O'Higgins 5.4 per cent.

Niter exported to the United States of America in 1916, 165,000,000 pesos; Great Britain, 32,000,000; France and other countries, 32,000,000. Total amount of other minerals exported: United States, 239,000,000; Great Britain, 104,000,000; France, 35,000,000.

Nationalities represented in the mining industry of Chile, based on the average value of production, rank as follows:

Chileans, 192,000,000; English, 136,000,000; North Americans, 59,000,000; Germans, 44,000,000.

Antofagasta, a very important port of exportation, is utilized by Bolivia by means of the railroad which connects the said port with the city of La Paz, the capital of Bolivia, over the Bolivian plateau. The traffic in minerals from Bolivia through the port of Antofagasta is indeed of great importance, as is also that through the ports of Mollendo and Arica, which are north of Antofagasta, and are the terminal points of railroads in Bolivia.

Principal minerals exported from Bolivia through the port of Antofagasta in 1916, and their corresponding value, as follows: *Tin*, 27,000,000; *Antimony*, 14,000,000 Chilean pesos; *Wolfran*, about 1,000,000; *Silver*, 1,200,000. Through the port of Mejillones also in northern Chile and just a few miles north of Antofagasta, Bolivia exported: *Tin*, 15,000,000; *Antimony* and other minerals, 1,000,000 Chilean pesos approximately. Through the port of Arica, another Chilean port situated about half-way between Iquique and Mollendo, Bolivia exported a total of 73,000,000 Chilean pesos worth of *Copper*, *Tin*, *Wolfran*, *Antimony*, etc.

Principal ports for the exportation of minerals, in the order of their importance, and value of exports in Chilean pesos: *Antofagasta*, 83,000,000; *Iquique*, 83,000,000; *Mejillones*, 64,000,000; *Tocopilla*, 42,000,000; *Valparaiso*, 40,000,000; *Caleta Buena*, 35,000,000; *Taltal*, 28,000,000; *Coloso*, 18,000,000; *Pisagua*, 11,000,000.

MINERAL WEALTH OF PERU IN 1917

Peru is also very rich in minerals. The value of mineral exports about equally balances that of vegetable exports, the former averaging about 43,000,000 Peruvian pounds, which are equal in value to English pounds sterling, and the latter 44,000,000 in 1916. The main source of mineral wealth is derived from the copper and petroleum which are exported chiefly to the United States of America, England and Chile,

Minerals exported from Peru in 1917, value in Peruvian pounds:

	<i>Peruvian pounds</i>
Metallic copper.....	6,077,000
Petroleum and by-products.....	1,182,000
Vanadium.....	309,000
Tungsten.....	99,000
Copper.....	103,000
Silver.....	38,000
Lead.....	35,000
Lixivated sulphides.....	101,000
Metallic silver.....	5,000
Metallic lead.....	16,000
Silver precipitate.....	16,000
Concentrated copper.....	70,000

Peru's percentage of imports and exports with its leading clients in 1917 in millions £.

	<i>England</i>	<i>United States</i>	<i>Chile</i>
Imports.....	20	57	13
Exports.....	17	57	8

Next come Bolivia, with £1,990,000 imports and £1,660,000 in exports.

ROUTES FOR THE TRANSPORTATION OF PERUVIAN COMMERCE

The 32,000,000 Peruvian pounds, which represent the commercial activities of Peru during the year 1917, were divided in the manner of routing, as follows: Maritime, 30,926,000; Fluvial, 1,092,000; Overland, 127,000.

The maritime traffic both on Peruvian importation and exportation is distributed through four of the principal ports, thus:

<i>Port</i>	<i>Percentage of Imports</i>	<i>Percentage of Exports</i>
Callao.....	72%	53%
Mollendo.....	8	9
Paita.....	5	4
Eten.....	3	3

The fluvial ports: Iquitos of Amazon—Imports, 3%; exports, 3%.

The fluvial ports: Iquitos of Amazone, import 3 per cent; export 3 per cent.

Peru has many other Pacific seaports besides those already mentioned, to wit: Salaverri, Trujillo, Chimbote, Cerro Azul, Pisco, etc., and on the Amazon, the ports of Iquitos,

Loreto and Leticia, the latter near the mouth of the Javary, which is near the boundary line of Brazil. The large tributaries of the Amazon in Peru are navigable to very close to the Andes.

Peru principally imports among manufactured articles, the following: tinctures, colors, chemical products, cotton, wool and jute fabrics, paper and cardboard, iron and iron supplies, electric, industrial and agricultural machinery, powder, dynamite and other explosives.

Peru's exports in 1917 were divided as follows: Animal products, 11 per cent; vegetable, 44 per cent; mineral, 43 per cent. The mineral and vegetable products chiefly exported in 1917, were: metallic minerals, sugar, cotton, borate, gum and petroleum. The principal animal products exported:

	<i>Peruvian Pounds</i>
Alpaca wool.....	845,000
Sheep wool, washed.....	645,000
" " , unwashed.....	219,000
Hides, sheep-skin and kid.....	343,000
Cattle.....	84,000

Principal vegetable products exported in 1917, and value in Peruvian pounds:

Sugar.....	4,111,000	Cotton-seed oil.....	120,000
Cotton.....	4,878,000	Cotton-seed and paste...	96,000
Gums.....	598,000	Rice.....	187,000
Cocaine.....	36,000	Toquilla straw hats.....	40,000

COMMERCIAL ACTIVITIES IN PERU

(1 Peruvian Pound=English Pound.)

The Peruvian pound as the standard unit of value was adopted since 1897. It is equal in value to the English pound sterling which is equivalent to 5 Argentine gold dollars. The Sol of gold is the fifth part of 1 pound.

The augmented commercial activities in Peru during the quinquennium of 1913-1918 were due to two essential reasons: first—increase in the price of all commodities, and second—increased production,

In studying the statistical records of the last 16 years beginning with 1902, we notice a gradual, though slow increase, as the following figures indicate—value in Peruvian pounds:

<i>Years</i>	<i>Imports (Pounds)</i>	<i>Exports (Pounds)</i>
1902.....	3,420,000	3,700,000
1917.....	13,500,000	18,137,000

or 293 per cent increase on imports, and 350 per cent on exports in 16 years. The last five years computation shows the following increase:

<i>Years</i>	<i>Imports (Pounds)</i>	<i>Exports (Pounds)</i>
1913.....	6,088,000	9,137,000
1914.....	4,827,000	8,767,000
1915.....	3,095,000	11,521,000
1916.....	8,683,000	16,541,000
1917.....	13,500,000	18,643,000

PRINCIPAL IMPORTS IN 1917

Cotton fabrics.....	1,942,000	Peruvian pounds
Metals.....	3,689,000	" "
Implements, etc.....	1,168,000	" "
Food.....	1,537,000	" "

Among the imported articles of food, we find: wheat (404,000 Peruvian), fats, wines, fresh and dried fruits, and canned milk.

Bulky articles and materials imported: lumber, mineral coal, oils and cement.

COMMERCIAL ACTIVITIES IN BOLIVIA—1915

(1 Boliviano=19½d.)

The Bolivian statistics on raw material, show that Bolivia produces all the principal minerals known, the mining industry constituting its principal source of wealth.

The exports for 1915 amounted to 95,000,000 bolivianos. One boliviano is equal to 19½ English pence.

The value of the raw material exported amounted to 90,000,000 bolivianos, which was nearly the entire value of Bolivia's exports. Among the minerals, *tin* leads with 44,885,000 bolivianos out of a total of 90,000,000. Tin exported

in 1912 and 1913: 60 and 67 million bolivianos respectively. Out of a total of 36 million kilos of tin, 35 million went to England and 1 million to the United States of America. Bolivia ranks second with 29 per cent of the world's production of tin, the Straits Settlements leading with 55 per cent. The copper (rosicler) exported in 1915 amounted to 9,000,000 bolivianos, or a total production of 17,000,000 kilos, of which 13 million were exported to the United States of America and 4 million to England. Copper in bars, which was exported to the same countries, amounted to 4 million bolivianos. Total copper production, 14,000,000 bolivianos.

Production of *Wolfran*, 792,000 kilos, valued at 1,000,000 bolivianos, exported to the United States and England. *Antimony* produced, 17,000,000 kilos valued at 13,000,000 Bs., exported also to the United States and England. *Bismuth* comes next with 666,000 kilos, valued at 3,600,000 Bs., exported to England. The production of *Silver* in 1915 was 2,982,000 Bs., and in 1918 it reached 8,000,000 Bs. *Lead* and *Gold* were produced in smaller quantities—362,000 and 306,000 Bs., respectively. The *Gum elastic* or *Rubber* produced in 1915, reached 5,000,000 kilos worth 10,000,000 Bs., the greater part of which was exported to the United States.

LINES OF COMMUNICATION IN BOLIVIA

Bolivia utilizes the ports of Antofagasta, Arica and Molendo on the Pacific, for the exportation of its minerals, being connected with these ports by the railroads, which extend to the mining centers. Arica has more traffic for the reason that it is the shortest route, but the Bolivians complain about the insufficiency of rolling stock to take care of their shipments and the lack of shipping facilities at the port, which is smaller than the port of Antofagasta, the leading seaport of that region for south bound commerce.

The traffic with Argentina will not be of much importance until the railroad from Quiaca on the frontier to the towns of Tupiza and Uyuni is completed. The railroad Oran-Em-

barcación tends to augment commercial traffic along the eastern region.

The leading consumers of Bolivia's exports (in bolivianos) rank as follows: England, 66,000,000; United States, 25,000,000; Argentina, 1,400,000; France, 817,000; Chile, 747,000. Bolivia imports from the United States, 4,770,000; England, 3,600,000; Peru, 4,200,000; Chile, 3,300,000.

CHAPTER XVII

THE TROPICAL FRUIT-PRODUCING REGION OF SOUTH AMERICA—BRAZIL, ECUADOR, COLOMBIA, VENEZUELA AND PARAGUAY

BRAZIL

We have in previous chapters described the regions where cereals and livestock are produced (Argentine and Uruguay); mineral producing region (the Andean republics of Chile, Bolivia and Peru); and we will now describe the regions where the tropical products of South America are to be found. These products include: coffee, cotton, tobacco, sugar, mate, bean cocoa, rice and lumber.

We learned that the agricultural industry of Peru is about equal in importance to its mining industry, particularly in the production of sugar and cotton. Ecuador, Colombia and Venezuela also have like products which make the bulk of the exports, but Brazil is the largest exporter of tropical products, inasmuch as its area is larger than all the other countries of the central region combined and the fertility of its soil is such that everything is produced in vast quantities. We have also learned that Brazil has 30,000,000 bovines, but considering that it has a population of 24,000,00, and its climatic conditions not being altogether suitable for the development of the best breeds of cattle, it is reasonable to believe that Brazil will not be a large exporter of meats, and its southern region (Rio Grande and Santa Catalina) and portions of the central plateaus (San Paulo, Matto Grosso, Goyaz, etc.) will raise enough livestock to supply the local markets. Out of 30 million bovines, exported 26,000 tons in 1916 and 51,000 in 1917. The foregoing figures represent hardly half of the quantity of meats which Uruguay

exported in 1917, and less than one-fourth of the meat which Uruguay exported in 1916.

However deficient the conditions might be for the raising of livestock in Brazil, specially sheep, it is endowed with exceptionally desirable conditions for the production of tropical products of all descriptions. The celebrated naturalist Agassiz, whom we have mentioned quite frequently and whose reports are worthy of repetition and belief, made a thorough study of the fauna and flora of Brazil during a trip of several years' duration in the Amazonian region, and in describing its natural wealth he made it clear that there was no other region in the world which could compare with it in the variety and abundance of fine grade lumber, which can be utilized for general and naval construction.

Brazil produces all the hard woods not subject to decay in water, such as the *ñandubay*, which is used in the construction of fences on the farms of the La Plata, also the *quebracho*, *lapacho* and *viraró* of Chaco and Paraguay, which are of equal hardness and incorruptibility. The pine forests of Brazil, which pine is now being utilized on the La Plata in the absence of Canadian pine, cover areas of hundreds of thousands of square kilometers. Should Brazil at any time control her own merchant marine and be in a position to properly exploit her extraordinary wealth of lumber, she will inundate the world with lumber which Europeans have not even seen, and which lumber is adapted to all works of construction not excepting marine.

The lumber now used in Europe and in the United States, in the construction of piers, does not compare with the beams of various kinds of hard wood (*quebracho*, *urunday*, *ñandubay*, etc.), which trees are larger than any that grow in Europe, and which last indefinitely under water. Notwithstanding this enormous wealth, the exportation of lumber from Brazil has just recently begun to show any importance, particularly the pine and cedar forests, which produced 64,000 tons of lumber in 1916, and 144,000 tons in 1918. These are very large forests all along the coast of the Atlan-

tic, on ranges not far from shipping points. The Brazilian cedar has, on account of its low price, replaced the Canadian pine in the construction of doors, windows and shutters.

Rubber, a product which has created world-wide demand, is very abundant in the region along the tributaries of the Amazon, specially on the Acre over territory drained by this river, a tributary of the Purus, which territory Bolivia ceded to Brazil in exchange for the railroad of the Madeira. Rubber exportation has decreased during the last few years, from 25,000 tons in 1914 to 15,000 in 1918.

Brazil has been exporting rice to the La Plata, replacing that which had been coming from Italy and Spain. In 1916 she exported 36,000 tons to the La Plata markets. Flour of *Tapioca*, known on the La Plata as *fariña*, has shown the largest increase in production, 45,000 tons of this product having been shipped to Montevideo and Buenos Aires in 1918. This article of food is very popular in Uruguay, as it is an excellent and exceptionally nutritive substitute for the potato.

Though Brazil has very valuable minerals, only *manganese* (two million pounds exported in 1918) and *coal* are exploited, the latter for the consumption of the Brazilian railroads.

The following figures give Brazil's exports during the first nine months of 1918:

<i>Product</i>	<i>Nine Months</i>
	<i>Value in Pounds</i>
	<i>Sterling</i>
Coffee.....	13,000,000
Rubber.....	2,600,000
Sugar.....	2,240,000
Tobacco.....	1,790,000
Mate.....	1,500,000
Bean.....	1,300,000
Cocoa.....	1,200,000
Carnauba (wax).....	900,000
Rice.....	800,000
Lumber.....	800,000

Brazil's exports gradually increased from year to year since 1914 till 1917, when the maximum value of £63,000,000

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in 1917 was reached (\$46,000,000 in 1914). The imports also increased during the same period, from 35,000,000 in 1914 to 44,000,000 in 1917.

TROPICAL REGIONS OF THE NORTHERN ANDES—ECUADOR, COLOMBIA, VENEZUELA

ECUADOR

(1 Sucre = \$0.50)

Next to Brazil, which is the largest region for the cultivation of tropical products, there is a smaller region composed of the countries occupying the northern part of South America, and which are Ecuador, Colombia and Venezuela. Though they are small compared with Brazil, they cover a large expanse of territory. Ecuador has an area of 300,000 square kilometers, and the other two, more than one million square kilometers of surface each; in other words, Colombia or Venezuela either one is larger than France and Germany combined, but the production does not correspond to the extent and wealth of its agricultural products—coffee, sugar, cotton and cocoa.

Since 1877, Ecuador has quite methodically increased its production of cocoa, exporting 45,000,000 kilos in 1917, of which 37,000,000 were shipped to the United States. Total valuation of cocoa exported that year, 26,000,000 sucres (1 sucre equal in value to \$0.50 American gold).

Coffee exported in 1917: 2,669,000 kilos, of which quantity 2,400,000 went to Chile. Total coffee production for 1917: 1,300,000 sucres.

Unpeeled *tagua* exported in 1917: 7,700,000 kilos, valued at 616,000 sucres, nearly the entire quantity having been exported to the United States. Peeled *tagua* exported during the same year: 8,500,000 kilos, valued at 1,160,000 sucres, the United States being the biggest consumer (over 5,000,000 kilos). England and Spain came next with more than 1,000,000 kilos each. The production in 1913 was much larger, when the total quantity exported amounted to 31,000,000 kilos.

The rubber exported by Ecuador in 1917 amounted to more than 412 tons with a valuation of 728,000 sucres.

The value of the hides exported during the same year was 1,320,000 sucres. Value of straw hats exported: 1,918,000 sucres, most of which were sent to the United States. The quantities of tobacco, quinine and cáscara de mangle exported, were of small importance, the largest being that of tobacco, value 20,000 sucres.

The value of Ecuador's total exports for 1917, was 33,500,000 sucres, 28,000,000 of which represented the exports shipped through Guayaquil. Besides the products above mentioned, Ecuador exported (within the above valuation) wool, 836,000 sucres; gold bars, 1,824,000, and 900,000 in minerals (not specified, as the statistics only refer to mineral ores).

The value of Ecuador's imports for 1917 was 20,900,000 sucres of which 12,000,000 came from the United States, 5,000,000 from England and more than one million from Spain. More than 19,000,000 came through Guayaquil. Principal articles imported: Fabrics, 6,000,000; food, 3,000,000; metallic articles, 1,500,000; clothing, 1,000,000.

COLOMBIA

(1\$ Colombiano = \$1.00)

Colombia occupies fourth place in South America, in extent of territory (see Table of Statistics). It is at present in dispute with Ecuador and Peru regarding the question of boundaries.

Brazil, Argentina and Bolivia rank first in the order named. Colombia has an area of 1,300,000 square kilometers, of which, more than two-thirds (805,000) comprise the plains drained by the tributaries of the Amazon—large navigable streams, among them the *Caquetá*, 2,200 kilometers long, the *Putumayo* and the *Yapura*. The Orinoco forms part of the boundary between Colombia and Venezuela. The

principal tributaries of the Orinoco are the *Guaviare* and the *Meta*.

The plains of Colombia produce high grade lumber, rubber, coffee, cocoa, cotton, tagua, etc. Cattle thrive well in this region.

The mountains cover more than 400,000 square kilometers of surface in the central part, and are more than 3,000 meters above sea-level. The highest points are Suma Paz (4,810 meters) and Sierra de Cocul (5,784 meters). The climate at 3,000 and 4,000 meters elevation is very mild and agreeable, and in direct contrast with the very warm and moist climate of the plains.

At the "Nevado de Tolima" the Central range attains a height of 5,584 meters. It is in this mountain district where the population is concentrated, and where the capital and larger cities of Colombia are situated. Here we find the bulk of the white population the descendants of the Spaniards, of pure Spanish blood, and the mestizos. According to Don Rafael Uribe y Uribe, 66 per cent of the population is composed of pure whites and mestizos, the latter the cross between whites and Indians, called "criollos" and whose skin shows the characteristics of the white race, with a very slight tinge of a copperish hue. Indians comprise 14 per cent of the population, Negroes 4 per cent and the cross between the Indians and Negroes 6 per cent.

The Andes in Colombia are divided into three small ranges, called Occidental, Central and Oriental, which, starting at the southern extremity, open up like the ribs of a fan with large valleys between, running north and south, and over which valleys the large rivers of Colombia flow—the *Magdalena* (1,700 kms.); the *Atrato* (570); the *Cauca*, a tributary of the Magdalena (1350). These three rivers flow in a northerly direction into the Caribbean Sea. According to Humboldt, the Sierra Nevada of Santa Marta forms an isolated mountain system near the Caribbean Sea, terminating at Mt. Horqueta (5,847 m. elev.).

These ranges form the relief and the three zones of

Colombia: The dry and sultry coast with very little rainfall; the eastern plains, and the central plateau which is at 3,000 to 4,000 meters above sea-level.

Bogotá is the principal and the capital city of Colombia. Population, 150,000. Elevation, 2,650 meters. It has a very pleasant climate, the average mean temperature being 14° centigrade, three degrees colder than Montevideo and Buenos Aires, which cities are in latitude 35° south, while Bogotá is in latitude 4° north.

Bogotá is a city of culture, its famous university having won for it the title of the "Athens of the North." The "Salto de Tequendama," one of the wonders of America, is at a short distance from the city. Here the Bogotá river drops precipitately a distance of 146 meters. Another spot of interest near the city is the "Abismo del Pandi," a crevice or gulch 5 kilometers long and 85 meters deep.

Other important cities: *Medellín* (71,000 pop.); *Barranquilla* (48,000); *Cartagena* (36,000); *Pasto* (27,000); *Cali* (27,000); *Manizales* (34,000).

Colombia at one time formed a part of Greater Colombia, which also included Ecuador and Venezuela, over which the Liberator Bolívar presided, but which union was dissolved in 1830, when it took the name of Republica de Colombia. During the dominion by Spain it was called Nueva Granada.

Coffee represents 50 per cent of the exports of Colombia, which in 1916 amounted to 31,000,000 pesos in value. The exports of 1915, in Colombian pesos—(rate of exchange, 1 Colombiano is equal to \$1.00 American at par) were:

Vegetable products.....	19,400,000
Mineral ".....	7,200,000
Animal ".....	3,100,000
Manufactured ".....	1,100,000
Live animals.....	520,000

The Colombian pound is equivalent to the English pound sterling, or \$5.00 gold.

The exports in either of the years 1912, 1913, 1914, and 1915, surpassed those of the year 1916, particularly in 1913,

when the value of the exports reached 34,300,000 pesos Colombianos.

Value of vegetable products exported: 1916, Coffee, 12,600,000; bananas, 2,600,000; tobacco, 611,000; tagua or vegetable ivory, 300,000; rubber, 723,000.

Value of minerals exported: Gold, 5,200,000; platinum, 2,017,000. Emeralds did not make a good showing, although the Muzo emeralds have become quite famous.

Value of animal products exported: Hides, 2,993,000; sheep-skins and others, 83,000.

Value of manufactured products exported: Sugar, 211,000; Panama hats, 871,000.

Value of live animals exported: Cattle, 514,000; horses, 2,400.

Colombia has 7,000,000 head of cattle.

Value of exports to the United States of America: Vegetable products, 19,000,000; mineral products, 6,000,000; animal products, 2,750,000; manufactured products, more than 1,000,000.

Out of a total value of 31,000,000 of Colombia's exports, 27,000,000 went to the United States of America.

Value of Colombia's imports for 1916: 29,600,000, of which more than half (16,500,000) came from the United States. Then followed England with 7,500,000; Spain, 700,000; France, 600,000; Italy, 550,000. Principal articles imported: Textiles, 13,400,000; metals, 2,240,000; food, 2,400,000; drugs and medicines, 1,300,000; agricultural and mining machinery, 830,000; books and paper, 913,000; beverages, wines and liquors, 666,000.

The three ranges of mountains make communication between central Colombia and the Pacific Ocean and the Caribbean Sea extremely difficult. The Magdalena and the Atrato rivers admit small vessels far into the interior of the country. The capital has railway connection with the Magdalena, at the port of Girardot.

There are ten short railroad lines with a total longitude of 1,000 kilometers, connecting the cities in the interior with

the Pacific ports, and which lines run as follows: Buenaventura to Cali on the Cauca valley; Cartagena, a port on the Caribbean Sea, to Calamar on the Magdalena; Santa Marta on the Caribbean Sea to the banana producing region, and to the Magdalena: Port Girardot on the Magdalena to Chicoral, connecting with the railroad at Buenaventura, a port on the Pacific; Cucuta to the Zubia river on the Venezuelan frontier.

Principal ports: *Barranquilla*, *Puerto Colombia* or *Sabanilla*, *Santa Marta* and *Riohacha* on the Caribbean Sea, and *Buenaventura* on the Pacific.

VENEZUELA

(1 Bolivar equals 1 Franc gold, or \$0.19)

Venezuela is a large country of more than 1,000,000 square kilometers in area. (See Table of Statistics.) The Orinoco river divides the country into two parts—the northern portion comprises the valleys of which we have made mention before in the chapter on orography, also a few mountain chains, the last straggling ramifications of the Andes, and which end on the Caribbean Sea.

We will leave the description to an eminent Venezuelan writer, R. Blanco Fombona, who has been Governor of the territory of the Amazon, the southern region lying between Rio Negro and the Parima mountains:

“The Orinoco first flows in a northerly direction to Maipures, where it suddenly comes upon a mountain of granite which obstructs its way. A terrific struggle between two veritable giants, the River and the Mount, takes place. The Mount interposes, but the River persists and finally its waters run over the promontories of stone. The River passes but the Mount will not give in and so the Orinoco (the River) is compelled to change its course by turning to the right and continuing its journey to the sea, no longer flowing north but from west to east. The field of struggle is along a stretch 50 to 60 kilometers in length. The Mount

seems to advance against the stream which has been gradually demolishing its granite prows by the force of its rushing waters. These rock crumbs, these fragments of stone, are not merely pebbles or chipped stones, but gigantic rounded boulders having the appearance of cupolas of submerged temples or raised but roofless stelas, obelisks or ramparts, or even that of stumps of well-shaped trees in a forest of lifeless vegetation.

"The Orinoco stream rushes precipitately over the rugged rocky passes, dashes against the high walls of granite and spreads over the sides, forming magnificent cataracts. The thundering noise of its raging waters reechoes in the desert many miles away, rhythmical, muffled, constant, as if that continuous thunder were the throbbing heart of the far distant forest. Such are the rapids of Atures and Maipures: a mountain of granite crumbling in the bed of the stream, a massive gate of stone, a sealed gate placed there by nature for the coming civilization, and it will not yield until the power of dynamite pronounces its command to open up.

These rapids are avoided by the traveler who steps on land on reaching this point and connects with that part of the river which lies separated from the field of struggle, then continues on his way. The indigenous products of the upper Orinoco and the Rio Negro, which are sent to Ciudad Bolívar, as well as the merchandise which is sent back from the latter place, are transferred, upon reaching the rapids, to oxen drawn carts."

In speaking of the territory of the Amazon, Fombona says: "That land is one of the most beautiful and fertile regions of the globe, though yet unknown. It is drained by some of the largest rivers—the Rio Negro and the Orinoco. The latter connects with the Amazon, through the Rio Negro and the Casiquiare. The yet virgin forests cover hundreds of square leagues, where rubber, sarsaparilla, vanilla, zarrapia, and a variety of tropical, resinous and medicinal woods of the finest grade are produced.

"Rubber is the principal product exploited, and it yields

vast returns. Rubber is bought from the Indian at 160 bolivares (francos) per quintal (one hundred kilo weight) and it is sold in Europe for 800 bolivares. The 150 bolivares are paid to the Indian, not in money but in merchandise of prime necessity, sold to him at a profit of about 200 per cent. It is a country of fables: it has large rivers of different colors, one with dark waters, one with almost black—*Rio Negro*—(Black River), another with reddish water—the *Atabapo*—another with green waters—the *Cataniapo*—and still another with yellow waters—the *Guaviare*. Many races of Indians inhabit Venezuela, and all are harmless, most of them are of industrious habits, and some of them very intelligent. In this region poverty is unknown and gold is plentiful, and though only at a distance of eight degrees from the equator, the climate which is tempered by the coolness from the rivers and the constant fanning of the numerous trees, is indeed very pleasant. Only one bad thing exists there and that is—the white man—he of the motley crowd who has gone there to amass a fortune in that country. All lawless individuals who are seeking shelter from the branch of society that pursues them, go there. All merchants who have failed and wish to rebuild their fortunes at the expense of scruples, go there. The territory of the Amazon is, in the plain twentieth century, somewhat similar to what all America may have been at the time of the first conquest.”

The exploitation of which the Indian workman is a victim is general over all South America from the Putumayo and the Orinoco to Paraguay. It suffices to read Barret’s “*El Dolor Paraguayo*” to form an idea of the barbarism and iniquity with which the workingmen who prepare the yerba mate in Paraguay are treated.

The tributaries of the Orinoco—Ventuari, Caura, Caroni—are important streams which drain the mountainous territory in the southern part, covered by thick forests which produce all kinds of fine lumber. The other tributaries—Guaviare, Vichada, Meta and Apure—which drain to the

left, are also large streams. The Meta and the Guaviare flow for a considerable distance of their course over the plains of Colombia, having their source at the foot of the Oriental range. The Casiquiare river joins the Atabasco, a tributary of the Orinoco, with the Rio Negro a tributary of the Amazon. The tributaries of the Orinoco are navigable for a long distance, as may be observed on the map "Means of Communication." The Orinoco offers navigable waters for transatlantic traffic to near the mouth of the Apure, from which point it becomes more shallow due to various cataracts which are found along its course though permitting the navigation of small vessels, except at the rapids of Atures and Maipures.

Communication between the Amazon and the Orinoco, through the Rio Negro, the Casiquiare and Atabasco, is difficult. This route was studied by Michelena and Rojas through recommendation of the Venezuelan government. The shortest route is through the Rio Negro and the isthmus of Pimichin lying between this river and the Temi, a tributary of the Atabasco. The land here is level, and within the 60 kilometers of distance there are a few lakes. The cities of Maroa and Yavite, which are on the line of the projected canal, are daily increasing their operations.

The plains of the Orinoco, which we have described in the continental orography at the beginning of this book, occupy almost one-fourth of the territory of Venezuela. The Caribbean Hills, the Segovia Highlands and the Mérida Range, are to be seen on the northern and northwestern part of these plains, near the coast. Near Caracas rises the *Silla* to 2,800 meters, and greatest height is attained at Columna on the Sierra Nevada, which is 5,000 meters above sea-level, and has perpetual snow.

We stated in the orographical section that the mountainous district of the northern part formed by the Andes is divided into warm, temperate and cold belts, according to the altitude, and that the products correspond to the three climatic belts, ranging from cocoa in the lower valleys to

moss, which is only found in the high frozen regions or páramos. La Guayan, or rather, all the territory to the south called the territory of the Amazon, which includes all the land between the Parima and the Rio Negro, is drained by upper Orinoco. This region is exceptionally rich in lumber, such as mahogany, silk-cotton-tree, balata or gum-tree, cinchona, palms, cedars, etc. Shomburg's catalog gives 2,500 species of plants in Venezuela which are the same as are found in Brazil and on the plains of Colombia.

The similarity of the fauna of Venezuela and Brazil is noticeable—*gimnotus electric*, *alligators*, *boas*, *carpinchos* or *capybara*, *comadrejas* or *opossums*, *ant-bear*, and even the *sheep-tick*, which attacks not only sheep but cattle as well and which kills so many animals in the La Plata, where they find it necessary to bathe the live stock in water prepared with insecticide in order to protect it from this horrible plague. Even the Indians of Venezuela, called Caribes, belong to the race of the Guaraníes, who inhabit Brazil and Paraguay.

The same gigantic skeletons of the *Megatherium*, which inhabited the Pampa of Argentina, are found on the banks of the tributaries of the Orinoco.

The *gauchos* or *llaneros* of the plains of the Orinoco resemble the *gauchos* of the La Plata in habits, indomitable courage, in the earnestness displayed in the war of independence, moral character, as they both descend from the Guaranies and Spaniards.

These *gauchos* herd several million head of cattle, though how many is not definitely known, but it is the opinion of some Venezolanos, that there are eight or ten million, while others claim that they own no more than two million head. Leonardo V. Dalton, in a very interesting book published in London in 1912, stated that according to data he received in Venezuela, the number of cattle at that time would not exceed two million head, but that there were as many as eight and one-half million in 1888.

We have not been able to obtain any additional data after

visiting the Consulate General of Venezuela in New York, and the same thing is true regarding information about Colombia and Ecuador, inasmuch as the publication of statistics in these three countries is limited. Among the minerals, the following abound: Petroleum, gold, silver, copper and iron, but on inspection of the table of exports, the reader will notice that the mineral production is small considering the vast natural resources of the country.

Agriculture is the main industry of the country, large quantities of coffee, cocoa, sugar and corn being produced; the first three form the bulk of vegetable products exported. Minerals exported: Melted gold, copper, asphalt, petroleum.

The exportation of meats is beginning to be of importance, and it is believed that the plains of the Orinoco will in time supply a good quantity of the meat to the packing industry. The exports also include live cattle and hides.

Other miscellaneous articles exported: Fine pearls, peanuts, goat-skins, sole-leather, fine lumber, beans, balata, rubber. Traffic is handled mostly through La Guayra, Maracaibo and Puerto Cabello, which are about equally important. Next in importance are the ports of Ciudad Bolivar, Carupano, Puerto Sucre, La Vela and Cristobal Colon.

Two-thirds of the exports of Venezuela go to the United States, the balance mostly to France, Spain, Curacao and Trinidad.

Imports received from the United States about 80 per cent, the balance mostly from England, Spain and Italy.

There are under operation 925 kilometers of railroads. The principal lines are: Caracas to the port of La Guayra; Valencia to Puerto Cabello; Caracas to Valencia; Trujillo to Seiba on Lake Maracaibo; Barquisimeto to Tucacas. The standard unit of value is the bolivar, which is equivalent to the franc (gold).

The total value of Venezuela's imports in 1916 were 13,000,000 dollars against 23,000,000 of exports. (See the Table on South American Commerce.)

Principal articles exported in 1915, in bolivares:

Coffee.....	54,600,000	Cattle.....	1,400,000
Cocoa.....	22,039,000	Rubber.....	1,400,000
Hides.....	8,600,000	Sole-leather.....	900,000
Balata.....	2,900,000	Fine pearls.....	859,000
Melted gold.....	7,800,000	Dividive.....	680,000
Greda gold.....	1,300,000	Frozen and salt meat..	600,000
Sugar.....	2,900,000	Panela.....	530,000
Goat-skins.....	2,800,000	Feather.....	529,000
Copper.....	1,700,000	Tobacco.....	439,000
Asphalt.....	1,420,000	Auriferous sand.....	246,000
Lumber.....	160,000		

PARAGUAY—CENTRAL AND TROPICAL REGION

\$1 gold Paraguay = 1 dollar)

Paraguay is an inland country without coastline the same as Bolivia, lying as it does in the heart of the continent. The Tropic of Capricorn crosses it at one and a half degrees north of a point half-way between the northern and southern boundaries, near where its historical capital city is situated on the Paraguay river. This territory, lying between the rivers Paraguay and Paraná, was the cradle of civilization of the La Plata region, and was also the principal center of the Guaranies, who were scattered throughout the whole continent as far as the Orinoco and the Antilles, as the Caribes who inhabited these islands were slightly related to the Guaranies, from whom they descended.

Though Paraguay is an inland country, it has communication with the whole world through the rivers Paraguay, Paraná and La Plata. There are Argentine navigation lines which have service between Buenos Aires and Asunción under regular schedule. There is also a Brazilian line with service between the same points but which goes farther north beyond Paraguay, as far as Matto Grosso, which in Portuguese means "Large Forest," as that part of Brazil is covered with magnificent forests of trees which can be utilized for all kinds of work of construction.

The Brazilian port of Corumbá on the Paraguay is in latitude 19° south, that is, six degrees north of the city of

Asuncion. There is another city still farther north in Brazil, the city of Cuyabá, which is in latitude 16° south, on the river of the same name, which city also communicates with the La Plata and Brazilian ports on the Atlantic, through the same steamship line as above indicated. The Paraguay river corresponds in the hydrography of South America to the Mississippi river of the United States, the Paraguay running parallel to the Paraná, but navigable to a greater extent than the latter, for the reason that it has no cataracts or other obstructions to impede its navigation for small vessels.

The Paraná has a parallel 24° south, the celebrated cataracts of the Guayra, which together with those formed by the Yguazú, are the two most magnificent in South America. The Yguazú is a large tributary of the Paraná. In regard to navigation facilities, the Paraguay stands alone in South America, for it is navigable to its very source, which is on the Sierra Parecis, which is the water-divide of the valleys of the La Plata and the Amazon.

At a short distance from the port of Cuyaba, 15 to 20 kms., is the source of the Arinos river, which flows into the Tapajos, a tributary of the Amazon. This region has been very thoroughly explored and described by Captain Bossi of the Italian navy, in a book he had published in 1875, explaining how easy it would be to construct a canal across this stretch of territory in order to connect La Plata and the Amazon. The Brazilians transported in time past cannons through the Cuyabá route to Pará, a port at the mouth of the Amazon. (See map on "Communications.")

The port of Corumbá in Brazil is opposite Port Suarez in a tributary of the river Paraguay, Bolivia, the latter being Bolivia's center of communication with the La Plata. This port will be still of greater importance when it is connected with Santa Cruz de la Sierra (425 miles by auto road), a very rich agricultural section of Bolivia, where sugar, cocoa, cotton, coffee and other tropical products abound. This is the future great route of Bolivia for the

transportation of the vegetable produce of the most fertile of its regions.

Its mineral products would have a better and more economical outlet via the railroads to Antofagasta, Arica and Mollendo, being that the minerals are exported to the United States and Europe, but the vegetables will have a better outlet via the La Plata, where a market will be found for them in the exchange for La Plata products and for goods which come from Europe. The construction of the Central Argentine railroad will be much more expensive, due to the long distance which it will traverse (1,500 miles from La Paz to Buenos Aires), as explained in the chapter on "Communications."

The distance from Corumbá and Port Suarez to Plata is covered in ten days, by small vessels making only eight miles per hour, stopping at ten or more ports before reaching Montevideo and Buenos Aires, but that distance could be covered in half of the time, as it is only a stretch of 15 degrees following the meridian of Greenwich (58) or 900 miles, while via the Paraná with its many bends the distance is 1,200 miles, which could be traversed in 100 hours by steamers making 12 miles per hour, and counting on 50 hours for stops, it would mean 150 hours or six days. But taking the train at Asunción and traveling say at about 40 kms. (24 miles) per hour, the trip from Asunción, the capital of Paraguay, to Montevideo can be made in 24 hours. By this route, via Asunción, Posadas, Salto and the Central Uruguayan railroad, the traveler can go from Sucre or Potosí in Bolivia to Montevideo in 59 hours, as shown in the book "Ferrocarriles Sud-Americanos" by the Uruguayan engineer Sr. J. J. Castro, which book was very well received by the Railroad Congress, which met in Buenos Aires in 1895. (We refer the reader to our map on "Communications," the detailed map of South America, and to the chapter "The Future Great Route of South America," so that he may form an idea as to the river connections through the continent, from the La Plata to the Panamá Canal.)

What we have herein stated proves that Paraguay is not what the superficial reader might imagine, who looks at the map and sees a country isolated from the rest of the world.

The portion of Paraguay which lies east of the river which gives this country its name is drained by the Paraná, which stream is navigable all along the Brazilian and Argentine frontier as far as the cataracts or Salto del Guayra.

Another portion of the territory of Paraguay lies between the rivers Paraguay and Pilcomayo, which is part of the region called El Chaco, a vast plain which occupies territory in Argentina, Bolivia, Paraguay and Brazil. There is a dispute at present between Bolivia and Paraguay on the question of the El Chaco boundaries. Thus, the exact area that Paraguay covers can not be definitely ascertained, for it varies from 253,000 to 445,000 square kilometers, the latter figures with the boundary line of Bolivia at parallel 18° south, the former would be the undisputed territory.

The boundary between Paraguay and Argentina was fixed by President Hayes of the United States of America, who was selected as arbitrator, and he pointed out the Pilcomayo river as the boundary between the two countries.

The Paraguayan territory is an undulated surface with hills of a few hundred meters elevation, and is drained by large streams which during the rainy season overflow and leave certain portions of its soil covered with water. The soil is very fertile and the climate, though warm, is never extreme. The contrast between the opposing seasons of the year is little. It has a heavy enough rainfall for its agricultural products and no need of irrigation even for its abundant supply of tropical products, such as cotton, tobacco, sugar-cane, coffee, bananas, oranges, cocoa, timber of all kinds, specially hardwoods among them, the quebracho, ñandubay, algarrobo, viraró, lapacho, etc., which on account of their lasting properties make them very valuable in the construction of buildings, implements, wagons, and fences. The hardwood region is in the Argentine and Bolivian Chaco. Annual rainfall 1.646 millimeters.

The most precious of the trees found in Paraguay is the "yerba mate" (Brazilian holly, *ilex paraguayensis*), the leaves of which when roasted and pulverized, or even whole, make delicious tea substitute. The celebrated French naturalist Bompland described the mate region thus: "The geographical section of the 'yerba' is marked in as singular a way as that of the precious trees which yield the quinine of Peru, and deserves mention. Take a ruler and place one of its edges on the mouth of the Rio Grande, a river in southern Brazil which flows into the Atlantic, and the other edge on Villa Rica, a city of southern Paraguay; all along this line and to the territory northeast of same for a considerable distance may be found large fields of 'yerba' growing in its natural state, while on the soil lying southeast of this line, whether at the foot of or within the mountains, only a few widely scattered plants are found." The infusion of "yerba mate" has thein and caffein in smaller quantities than tea and coffee, has stimulating properties, quenches thirst and satisfies hunger as does the coca of Bolivia. Cases are cited where soldiers have lived for two and three days without any food and drinking "mate" only. It is more satisfying in summer, when it not only quenches thirst but makes a cool and refreshing beverage.

Yet, notwithstanding the fact that Paraguay is one of the most fertile countries of South America, the quantity of its products is very small, as is the case also with its exports, due principally to the scarcity of men, as the man power of Paraguay was exhausted during the prolonged war which the tyrant Lopez fought against Brazil, Argentina and Uruguay, when 160,000 men were killed in battle and the rest were subsequently decimated by various forms of disease—cholera morbus, typhus and small-pox.

Principal products exported: Tobacco, timber, yerba mate, oranges and bananas. Live bovines, salt meat and hides are also exported.

CHAPTER XVIII

FUTURE SOUTH AMERICA

ORATION DELIVERED BY THE CELEBRATED URUGUAYAN WRITER
JOSE ENRIQUE RODÓ BEFORE THE CHILEAN CONGRESS
AT THE CENTENNIAL ANNIVERSARY OF THE
INDEPENDENCE OF CHILE

I should here be the voice of a people. I should be capable to instill it and maintain it in my words in order to transmit to you the intensity of emotion with which my people share in the enthusiasm of this Centennial, for that which this Centennial has that is American and for what it has that is Chilean.

For that which it has that is American, permit me to grant preeminence to this characteristic over the other. Higher than the Centennial of Chile, than that of Argentina, than that of Mexico, do I feel and perceive the Centennial of Spanish America. In spirit and in facts of history there is only one Spanish-American Centennial, for in spirit and in facts of history there was only one Spanish-American revolution; and the unity of this revolution consisted not alone in harmonious blending of men and events which contributed to its realization and its dissemination over a whole continent, but chiefly in that the historic destiny of that revolution was not to enlighten an inorganic ensemble of nations to remain separated by narrow sentiments of country and nationality, but to spread over the face of the earth a perennial harmony of peoples united by commonness of origin, of tradition, of language, of customs and of institutions, by geographical contiguity and by all things that can possibly serve as a foundation for the unity of a collective conscience.

These are, therefore, in America, the days of a great Centennial which single and complex will lengthen into two decennials, evoking day by day in each American people, the reminders of the independence and of the organization, that variety of reminders which remains forever, as the most exalted and the most sacred in the history of nations.

It could be said that an imposing assembly, which has been gathering since the long ago, watches us and listens—the assembly composed of those generations which created for an everlasting future a liberated America. So, on this unique occasion, the generations living today can make before this heroic restored past, two assertions which will satisfy and comfort them. As testimonials to the first of these—the unanimity and solemnity of this international adhesion which the American Centennial incited in Argentina yesterday and which in Chile it incites today, and which assertion is to the effect that this, the so-much-discussed, so-much-opposed, so-much-defiled Spanish America, by outsider's ignorance and pride and even by the scepticism of its own children, now begins to live before the conscience of the universe, and is beginning now to attract the attention and the interest of the world, not for its resplendence and spontaneity of culture as yet, not for its political influence in the society of nations, but it has by the virtuality and reality of its wealth, by the force and energy displayed in its material development, which although it may not constitute a definite proof of civilization, at least furnishes a solid foundation as the rustic and strong origin in the organization of peoples who some day will be giants in spirit.

For a long time after our emancipation the world failed to recognize us, or knowing us slightly and disdainfully refusing to know us better, it doubted us. Perhaps, sometimes, embittered by the apparent unfruitfulness of innumerable efforts of anguish, obscure sacrifices, we doubted ourselves, and this cruel doubt did not forgive—at the Gethsemane of Santa Marta—the lacerated soul of the Liberator. But after all, we have conquered doubt, and today our hopes

for the immediate future are lofty and firm and the faith of the world begins to reward and confirm them. We were until yesterday only a little more than a geographical name and started to become a power; we were a rash promise, and started to become a reality.

Another encouraging assertion is permitted by the manner in which this first century ends; and it is, that the Spanish-American nations begin to show a resolute and clear conscience in the unity of their fate, in the inviolable solidarity which takes root in what is fundamental of their past and lasting with the extent of their infinite future. Auguste Comte expressed his profound faith in the future conscience of the solidarity of humanity, saying that humanity as a collective being does not exist as yet, but that it will some day. Let us suppose that America, our America, that of our family, begins to exist as a collective being conscious of its identity. The assembling of the various Congresses, the building of railways connecting one country with another, the settlement of international disputes, the closer communion of intellectual ties, all tend to show that a well-developed American conscience exists.

I have always believed that in our America it is not possible to speak of many distinct countries, but of a country single and great. I have always believed that the idea of country is lofty, that it is the expression of what is most ennobling in man's sensibility—love of the soil, the poetry of memories, the ecstasy of glory and the hope of eternal life. In America more than anywhere else is there room without denaturalizing the idea, to magnify it, to diffuse it, to cleanse it of what is narrow and negative, and to elevate it for the natural virtue of what it holds that is positive and prolific. It is proper to build above the native country the American country, and to hasten the day when the children of today—the men of the future—on being asked the name of their country, they will not reply with the name of Brazil, nor the name of Chile, nor that of Mexico because they answer with the name of America.

Any international American politics not guided toward this end and not adjusted to the preparation of this harmony will be void and misguided politics.

I will repeat here what I had occasion to say recently: When America first joined the ranks of history, it was not only a new geographical entity that appeared on the face of the globe. We must realize that with America came a new spirit, a new ideal—the spirit and the ideal of the future. Europe, the master of civilization, which has instructed us and nursed us in her ideas of liberty and justice, fruit of her experience and her genius, has the right to expect that, once relieved of the wearisome load of tradition, we will do something more besides repeating them. She has the right to expect that we incorporate them in reality, or at least, that we strive energetically to live up to them. If there were no originality in our own civilization and if we could add nothing in the actual course of life to what is imitated and inherited, what would the revolution of 1810 mean, in a definite way, but a superficial convulsion, unworthy of such praise? What else could it mean but that we would continue to be colonies in spirit after ceasing to be colonies in political reality?

Those who considered it an unrealizable miracle for peoples to interchange relations through other means than those of international traditions, founded on force and deceit, and that America should be the place for its accomplishment, forget that a greater miracle is being realized and is tangible—the materialization of this Centennial.

If little more than a century ago, or in other words, if previous to the time of the North American independence and the French Revolution it had been affirmed that Democracy and the Republic as permanent forms of social and political organizations would not only become a realization with great and powerful nations, but that they would extend through the whole length and breadth of a continent and that this prodigy would be the offspring of the obscure European colonies then submerged in the soporiferous sleep

of infancy, the assertion would have appeared as the most laughable paradox.

So, when the virtuality of ideas and the energy of young and vigorous nations have been efficient enough to transform obscure colonies into self-possessed nations, and to implant from one to the other extremity of a continent the advanced forms of organization and of government which a little more than a century ago seemed to man's common sense mere empty Utopias, why doubt that that virtuality of ideas and that same energy of young and vigorous nations will some day, internationally, accomplish in America that which the sceptics of today hold in dreams and chimeras in opposition to the fatal laws of history: An exaltation of the idea of country; a future of peace and love among nations; international harmony founded on the accord of the interests of all by the loyal respect of the rights of each separate nation?

STATISTICS

TRADE PER INHABITANT

YEAR 1911—(IN DOLLARS)

Belgium.....	\$200	Germany.....	\$62
Great Britain.....	174	United States.....	38
Cuba.....	110	Brazil.....	36
Argentina.....	98	Italy.....	29
France.....	84	Austria-Hungary.....	20
Uruguay.....	80	Spain.....	18
Chile.....	71		

SOUTH AMERICAN TRADE

YEAR 1915—(MILLION DOLLARS)

Importation, 525 Millions. Exportation, 1,175 Millions.

	Importation	Exportation	Total
Argentina.....	220	541	761
Brazil.....	146	257	403
Chile.....	55	117	173
Uruguay.....	36	76	112
Colombia.....	18	29	47
Peru.....	15	68	83
Venezuela.....	13	23	36
Ecuador.....	8	15	23
Paraguay.....	2	8	10

SOUTH AMERICA—EXPORTATION

1913-1916 COMPARED

(Union Pan-American Review).

	1913 Million Dollars	1916 Million Dollars
Total.....	1,547	1,875
United States.....	481	850
Great Britain.....	324	396
Germany.....	193	...
France.....	128	156

SOUTH AMERICA—IMPORTATION

1913-1916 COMPARED

	1913 Million Dollars	1916 Million Dollars
Total.....	1,326	1,037
United States.....	24% 328	51% 530
Great Britain.....	23% 314	18% 190
Germany.....	16% 219	...
France.....	8% 110	4% 47

CURRENCY, WEIGHTS AND MEASURES

LINEAR OR LONG MEASURE

1 statute mile = 1,760 yards = 5,280 feet = 5280 × 0.3048 meter = 1,609 meters 244 millimeters = 1609.244 meters.

1 nautical mile = 6,085 feet = 1,855 meters. 1 sea mile = 1,885 meters.

1 fathom = 6 feet = 1.828 meters. 1 yard = 3 feet = 0.914 meter. 1 meter = 3.280 feet.

1 acre = 4,840 square yards. SQUARE MEASURE

1 hectare = 2.471 acres. 100 hectares = 247.1 acres = 1 square kilometer.

1 square mile = 258.9666 hectares = 2 square kilometers 5 896 meters = 2.5896 square kilometers.

1 pound = 0 kilogram 450 gram.

WEIGHT

THERMOMETER

0 degree centigrade = 32 Fahrenheit. 180 degrees Fahrenheit = 100 centigrade.

MONEY (at par) (Gold)

Uruguay—\$1 = 1.035 American = \$1.072 Argentine (Gold).

Chile—\$1 = 0.222 dollar. Bolivia—Boliviano = 2.06 francs.

Peru—5 soles = 1 English pound.

Brazil—Milreis gold = 2.75 francs.

Ecuador—1 sucre = \$0.50. Colombia—\$1 = 1 dollar.

Venezuela—1 bolivar = 1 franc. Paraguay—\$1 = 1 dollar.

DATE DUE

~~JUN 4 1968 S.L.~~
~~APR 25 1968 S.L.~~

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